The TIMBER RESOURCES of PENNSYLVANIA

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NORTHEASTERN FOREST EXPERIMENT STATION, UPPER DARBY, PA.
FOREST SERVICE, U.S. DEPARTMENT OF AGRICULTURE
RICHARD D. LANE, DIRECTOR

PREFACE

UNDER the authority of the McSweeney-McNary Forest Research Act of May 22, 1928, and subsequent amendments, the Forest Service, U. S. Department of Agriculture, conducts a series of continuing forest surveys of all states to provide up-to-date information about the forest resources of the Nation.

A resurvey of the timber resources in Pennsylvania was made in 1963-65 by the Northeastern Forest Experiment Station, approximately 10 years after the initial forest survey.

In this resurvey, as in the initial survey, the Northeastern Station again received cooperation from the Pennsylvania Department of Forests and Waters. The Department purchased the aerial photographs of the entire State that were used for the resurvey, and gathered information on the output of timber products. State field crews remeasured initial forest-survey plots and established new plots on all State forest land.

Personnel of the Allegheny National Forest carried out the part of the survey on National Forest land in northwestern Pennsylvania. The Area Redevelopment Administration financed the establishment of many additional field sample plots to provide data of greater reliability. The Glatfelter Paper Company provided additional funds to intensify the survey in nine counties in the south-central part of the State.

This report summarizes the timber-resource situation and the changes that have taken place since the initial survey, and points out trends of the timber supply.

In this resurvey, a large percent of the initial ground plots were remeasured to provide estimates of net annual timber growth and estimates of land-use change and to update the initial forest inventory volume. New ground plots were established for an independent second estimate. These two sets of estimates were weighted and combined to give the current estimates of forest area and timber volume.

Sampling errors, which indicate reliability, are shown for most of the totals of the breakdowns of the new estimates. Users of these resource data are cautioned to read with care the definitions of terms and the section pertaining to the reliability of the estimates.

PHOTO CREDIT: THE PENNSYLVANIA RAILROAD COMPANY.

COVER PHOTO: The famous horseshoe curve, near Altoona in Blair County.

The TIMBER RESOURCES of PENNSYLVANIA

by Roland H. Ferguson

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The Author

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FS-453897

The scenic Susquehanna River in Bradford County.

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Highlights

TEN years have passed since the Northeastern Forest Experiment Station completed its first forest survey of the timber resources of Pennsylvania. During this period considerable changes took place—forest-land area increased and total timber volume increased. Annual growth is so much greater than the annual cut that new industries will find an ample timber supply. The resurvey of Pennsylvania, completed in 1965, showed that—

Commercial forest land amounts to 16,718,000 acres, an increase of more than 10 percent.

Growing-stock volume (trees 5.0 inches d.b.h. and larger) adds up to 17,860 million cubic feet, an increase of 30 percent.

Sawtimber volume of all species amounts to 26,269 million board feet, an increase of 27 percent.

More than one-half (55 percent) of the sawtimber volume is in trees less than 15.0 inches d.b.h.

Forty percent of the volume of sawtimber is in the oak species.

The volume of oak sawtimber increased 40 percent, to 11,086 million board feet.

Black cherry volume makes up more than 10 percent of the total volume of hardwoods.

The volume of black cherry increased 40 percent, to 2,511 million board feet.

Only three species—yellow birch, beech, and basswood—decreased in sawtimber volume. Together their volumes decreased more than 30 percent, down to 1,505 million board feet.

Average net annual growth of growing stock is 615 million cubic feet, and the average annual cut is 204 million cubic feet.

Average net annual growth of sawtimber is 1,001 million board feet, and the average annual cut is 439 million board feet.

Timber Resource Trends

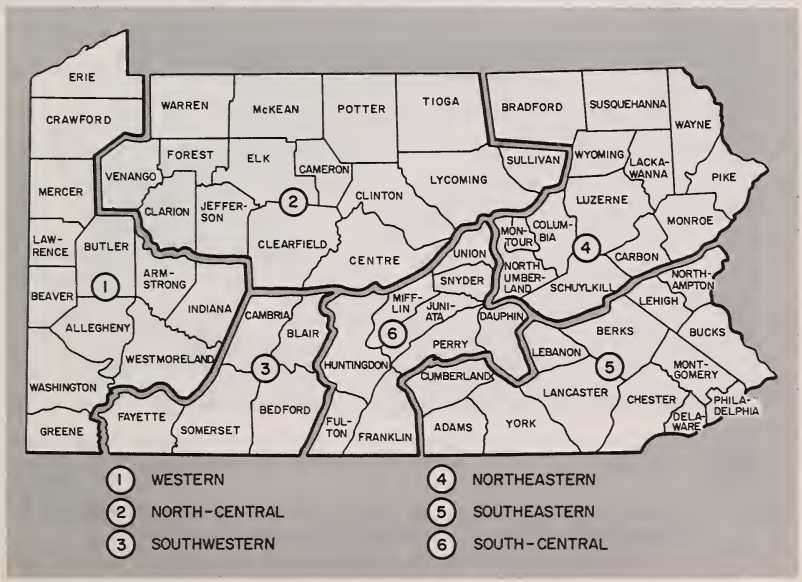
FOREST AREA INCREASED

Commercial forest-land area[1] in Pennsylvania increased considerably in the last 10 years and now totals almost 17 million acres. During the period between surveys, the area of commercial forest land increased at an average rate of 160,000 acres, or about 1 percent per year. Noncommercial forest land also increased to slightly more than 1 percent of the total land area.

Although some forest land was cleared for urban development, superhighways, industrial sites, and other uses, the acreage of nonforest land reverting to forest was much greater. More than 1.5 million acres of cropland and treeless pasture land were abandoned in the 10-year period 1954-64 (U.S. Census of Agriculture). Much of this land became 10 percent or more stocked with growing-stock trees and accounts for most of the large increase in forest-land acreage.

[1] See appendix for definitions of this and other terms used in this report.

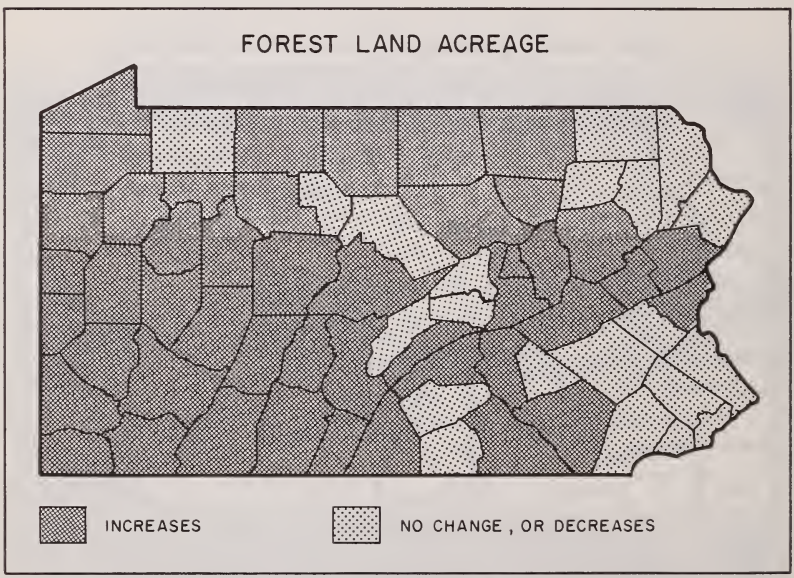
Forest-survey geographic units in Pennsylvania.



The greatest change in commercial forest area occurred in the Western unit, which had an increase of about 40 percent. In contrast, the already lightly forested Southeastern unit decreased 4 percent in commercial forest area. The acreage of commercial forest land and the percent of change for each of the six geographic units are:

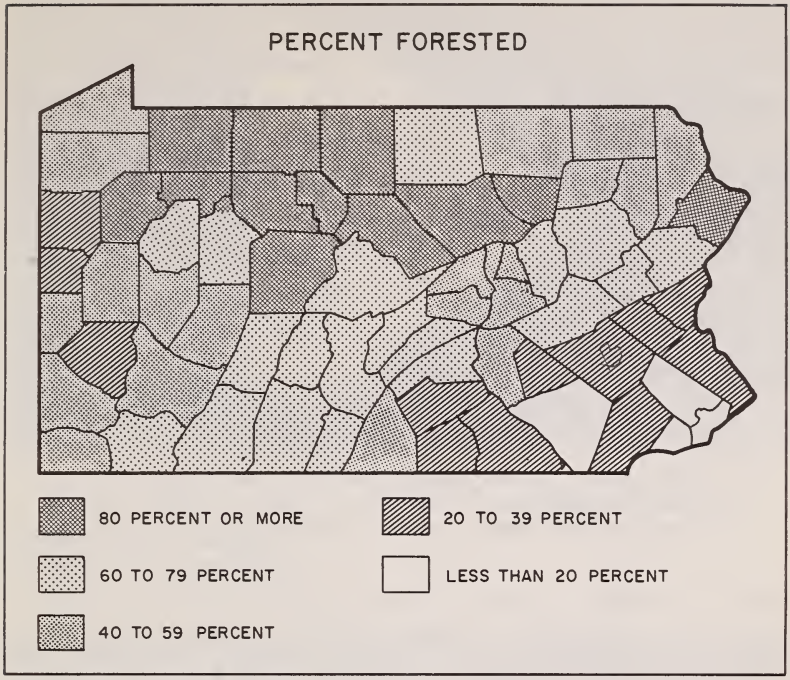
Geographic unit	*1955 (thousand acres)*	*1965 (thousand acres)*	*Change (percent)*
Western	1,791	2,528	41
North-Central	6,016	6,609	10
Southwestern	1,479	1,685	14
Northeastern	2,970	3,109	5
Southeastern	1,125	1,085	—4
South-Central	1,691	1,702	1
State total	15,072	16,718	11

Increase in commercial forest-land acreage varied considerably among counties. Of the 46 counties that had increases, 19 counties had increases of less than 11 percent; 20 counties had



Two-thirds of the 67 counties in Pennsylvania had increases in commercial forest land acreage.

One-half of all the counties of Pennsylvania are more than 60 percent forested.

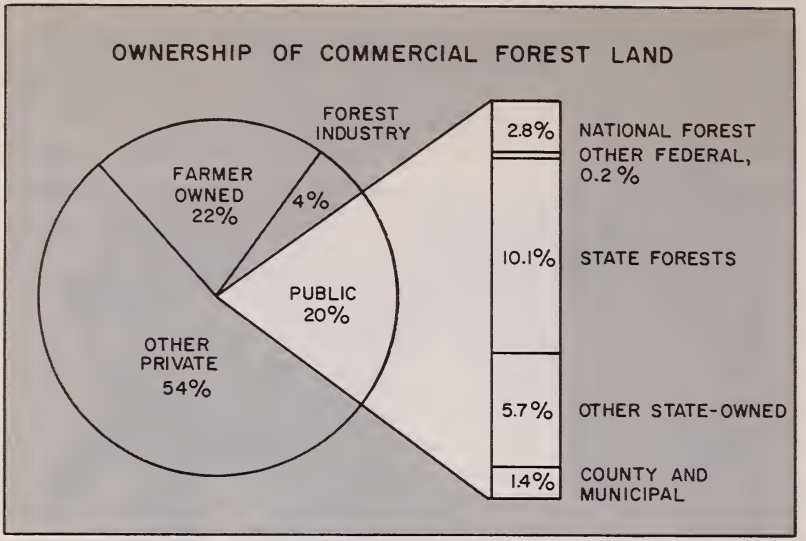


increases of 11 to 40 percent; and seven counties had increases of more than 40 percent. Decreases in commercial forest-land acreage for the remaining 21 counties were as much as 24 percent. The most heavily forested counties are in the northern part of Pennsylvania. Twelve counties now have 80 percent or more of their land in forest—five counties more than in 1955.

Forestry-Industry Holdings Increase

Although forest-industry holdings make up only 4 percent of the commercial forest-land area (610,000 acres), they increased at a faster rate than any other kind of ownership. Forest-industry holdings increased almost 40 percent in forest area during the 10-year period.

Public ownership of commercial forest land makes up 20 percent of the total—3.4 million acres. Half of this is in State



Eighty percent of the commercial forest-land area is in private ownerships; 10 percent is in State Forests, and 10 percent is in other public ownerships.

Forests that are found in 38 of the 67 counties in the State. The Allegheny National Forest, in the northwestern part of the State, accounts for 466,000 acres; and other Federal ownerships total 30,000 acres. The largest increase in public ownership was in county and municipal holdings, which add up to 242,000 acres.

Farmer-owned forest land totals 3.6 million acres. The change in acreage between surveys is due mostly to differences in definitions of farmer-owned woodland and farm woodland. Farm woodland as defined and reported in the U. S. Census of Agriculture was used for the previous estimate.

More than one-half of the total commercial forest land (9.1 million acres) is owned by a large number of small landowners of diverse occupations and by some larger landowners such as coal, oil, and gas companies, and hunting and fishing clubs.

An Increase in Poorly Stocked Stands

Abandoned fields revert slowly to woodland over a period of many years and consequently many are inadequately stocked

Poorly stocked stands (less than 40 percent stocked with growing-stock trees), although they total less than 2 million acres, make up a greater percentage of total commercial forest land than they did in 1955. These stands now account for more than 10 percent of the total forest-land area. Nonstocked areas (less than 10 percent stocked with growing-stock trees), included in the poorly stocked timber-stand estimates, make up a very small part of the total. The acreage of nonstocked areas amounts to a little more than 300,000 acres.

Timber stands that are more than 40 percent stocked with growing-stock trees also increased in acreage between the two surveys. They now total 14.8 million acres and represent almost 90 percent of the forest-land area. Included in this estimate are 8.7 million acres of timber stands that are well-stocked—stands that are 70 percent or more stocked with growing-stock trees.

Considerable Change in Species Composition

Forest types are classified on the basis of plurality of stocking by key species of all live trees. A change in species composition within a forest stand that affects plurality of stocking of its key species will also affect the forest-type classification. Stocking of softwood trees in many predominantly hardwood stands increased between the two surveys. Softwood forest types increased 30 percent in area to a total of 1.2 million acres.

Oaks and their associated species make up three major forest types, depending upon the stocking of oak and the relative stocking of pine, gum, hickory, and other species. If forest types had been classified on the same basis on the initial survey, the reported acreage for the oak types would have been considerably less, and the acreage of oak types would have shown an increase. (This premise is supported by the fact that growing-stock volume of all oaks increased by more than one-third between surveys.) The current acreage of all oak types is 8.0 million acres—7.7 million acres in oak-hickory and 300,000 acres in oak-pine and oak-gum.

The sugar maple-beech-yellow birch type made up about one-fourth of the commercial forest-land area in 1955 and about

one-fifth in 1965. Some of the decrease is attributable to procedure, and some is due to a decrease in beech and yellow birch. This forest type covers 3.5 million acres and includes the localized black cherry forest type.

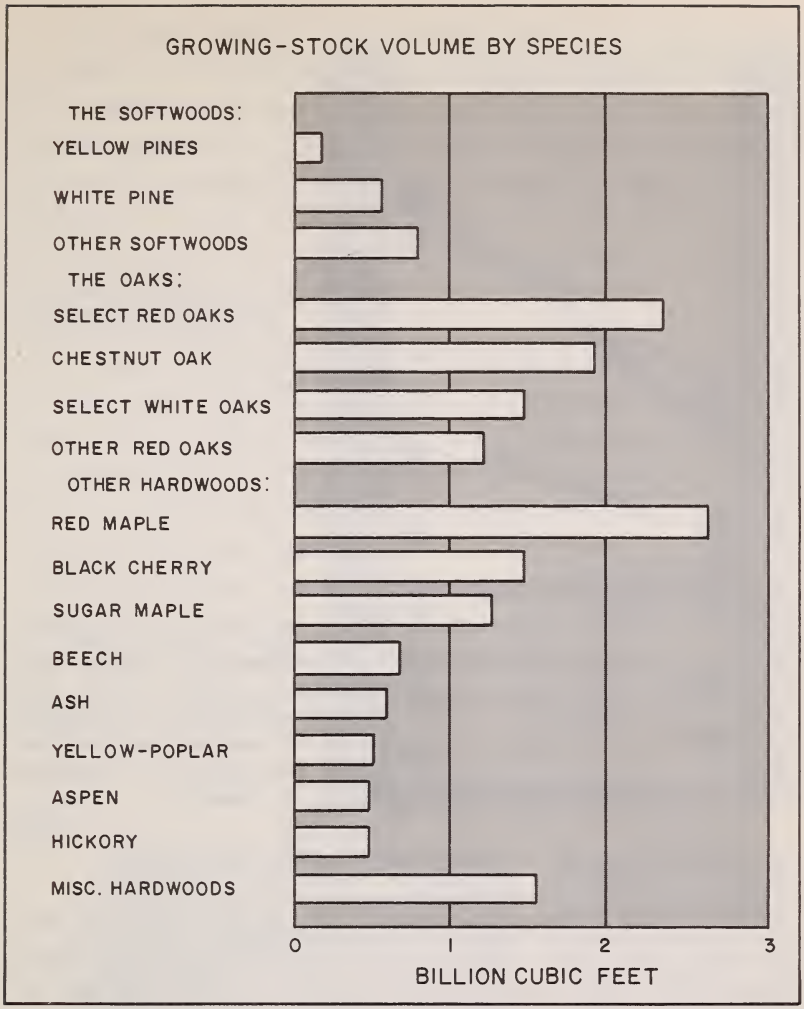
All other hardwood forest types are included in two major forest types—elm-ash-red maple and aspen-birch. As mentioned earlier, a considerable acreage of these types was included in the 1955 oak type estimates; therefore the actual increase in acreage of the elm-ash-red maple and aspen-birch types is less than indicated. Acreage in these two major forest types now amounts to 4.0 million acres.

GROWING-STOCK VOLUME INCREASED

Soundwood volume in all live trees now totals 20 million cubic feet, an increase of nearly one-half since the initial survey. Of the trees that were 5.0 inches d.b.h. and larger, an average of one tree out of seven was a rough or rotten tree. Volume in such trees, about one-tenth of the soundwood volume, increased by 50 percent. Growing-stock volume increased by 30 percent to 17.9 million cubic feet.

The largest concentration of growing-stock volume was found in the North-Central unit—7.9 billion cubic feet, or 44 percent of the State total. However, this unit had the smallest percent of increase between surveys, a little over 20 percent. The volume of growing-stock and the percent change for each of the geographic units are:

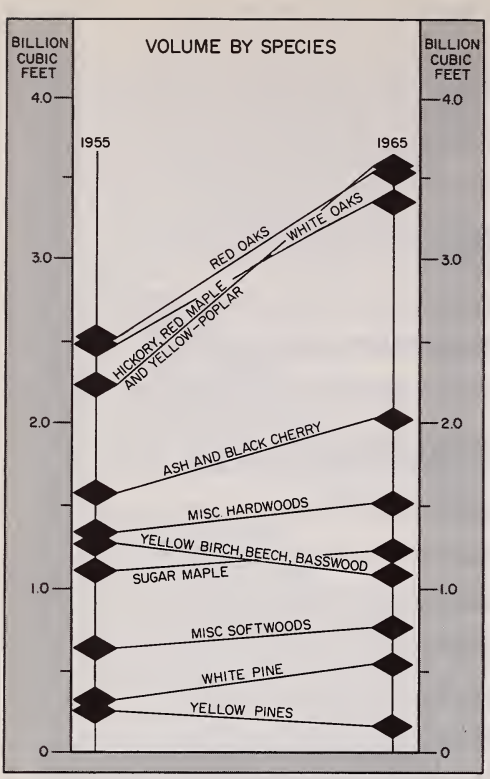
Geographic unit	*1955 (million cubic feet)*	*1965 (million cubic feet)*	*Change (percent)*
Western	1,497	2,139	43
North-Central	6,480	7,928	22
Southwestern	1,173	1,698	45
Northeastern	2,055	2,814	37
Southeastern	969	1,264	30
South-Central	1,576	2,017	28
State total	13,750	17,860	30



Seven species or species groups had growing-stock volumes that exceeded 1 billion cubic feet.

Hardwoods Increased More than Softwoods

Hardwood growing-stock volume increased at a faster rate than softwood growing-stock volume. Hardwood volume increased 31 percent, and softwood volume increased 16 percent. The proportion of softwood volume to total growing-stock volume dropped slightly, from 9 to 8 percent.



Oaks had the largest increases in volume. Yellow birch, beech, and basswood all decreased in volume; and the yellow pines also decreased in volume.

Most of the softwood volume—1,052 out of the 1,477 million cubic feet total—is found in the North-Central and Northeastern units. The volume is about equally divided between the pines and all other softwoods.

Oaks as a group make up almost 40 percent of the growing-stock volume, or 6,877 million cubic feet. Red maple accounts for more volume than any other single species in the State—2,611 million cubic feet. Black cherry and sugar maple are the only other species whose volume in 1965 exceeded 1 billion cubic feet.

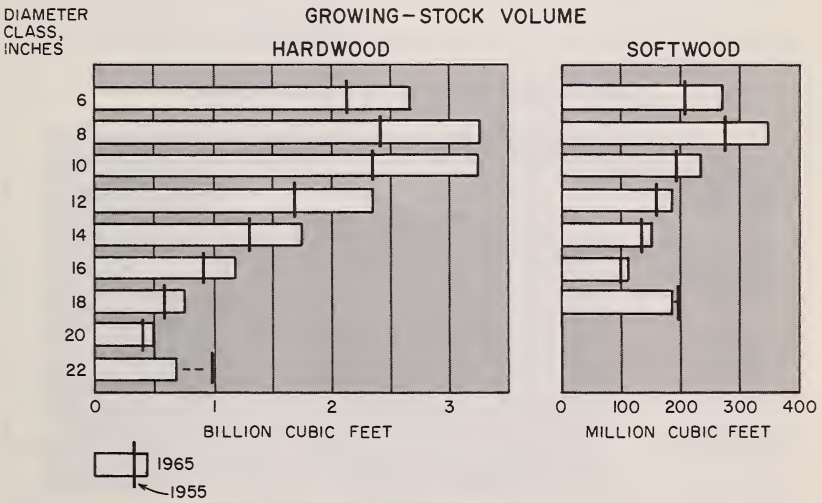
Although softwoods and hardwoods increased considerably in volume, individual species had a wide variation of increases and decreases. Yellow pines decreased 35 percent—from 258 million to 168 million cubic feet—but white pine and hemlock increased by more than 30 percent.

Yellow birch, beech, and basswood had an average decrease in volume of more than 10 percent, but all other hardwoods had increases in volume. Hickory, red maple, and yellow-poplar volumes increased by about 60 percent. The other hardwood species had increases in volume that ranged from about 5 to 40 percent.

Greatest Increase in Poletimber Volume

Volume in poletimber trees (9,788 million cubic feet) makes up more than one-half of the total growing-stock volume. Softwood volume in the 6- and 8-inch diameter class totals more than 40 percent of the softwood volume, and hardwood volume in the 6-, 8-, and 10-inch diameter class totals more than 55 percent of the hardwood volume.

Between surveys, the volume in softwood poletimber trees increased to 623 million cubic feet; the larger increase in volume was in the 8-inch diameter class. Volume in hardwood poletimber trees increased to 9,165 million cubic feet. The greatest



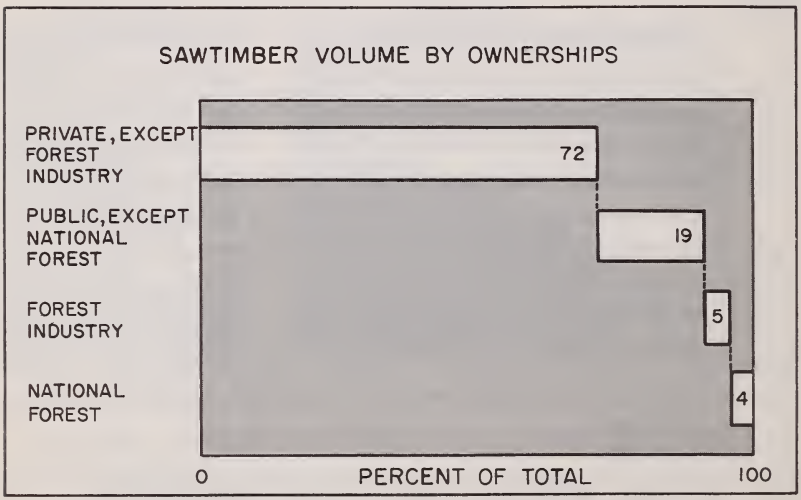
Softwood poletimber trees (6- and 8-inch diameter classes) increased about 30 percent in volume, and hardwood poletimber trees (6-, 8-, and 10-inch diameter classes) increased 33 percent in volume.

increases were in the 8- and 10-inch diameter classes; together they increased to 37 percent more than their combined volume in 1955.

SAWTIMBER VOLUME INCREASED

Sawtimber volume increased between surveys to 26 billion board feet, of which 3.3 billion is softwood and 23.0 billion is hardwood. White pine, Virginia pine, and pitch pine volumes (about 1.7 million board feet) make up one-half of the softwood volume. Northern red oak, with 4.4 billion board feet, is the predominant hardwood species and makes up almost one-fifth of the hardwood volume. The next most prominent species are black cherry and red maple, each with 2.5 billion board feet. These are followed by white oak, chestnut oak, other red oaks, sugar maple, and yellow-poplar. All other hardwood species had less than 1 billion board feet each.

Private owners collectively own 77 percent (20.3 billion board feet) of the sawtimber volume. Of this, forest industry owns



Private owners own more than three-fourths of the sawtimber volume. Volume in public ownerships makes up almost one-fourth of the State total.

1.1 billion board feet, 5 percent of the State total. The Allegheny National Forest has 1.1 billion board feet. State Forests and other public ownerships have 4.9 billion board feet. Sawtimber volume in public ownerships more than doubled between surveys, and the volume in private ownerships dropped about 3 percent.

The large changes in sawtimber volume by ownerships caused corresponding changes in average volume per acre of commercial forest land. Average volume per acre for all ownerships is 1,570 board feet. National Forest land has an average of 2,340 board feet per acre, and all other public forest land has 1,680 board feet per acre. Because of the large increase in forest land, the average volume per acre of privately owned forest land dropped from 1,780 to 1,520 board feet, a decrease of about 15 percent.

Volume in North-Central Unit Increased 2 Billion Board Feet

The North-Central unit, largest in forest acreage, also had the largest volume of sawtimber (11 billion board feet), more than 40 percent of the State total. Sawtimber volume in this unit increased 25 percent between surveys. Increases in sawtimber volume by units ranged from 14 percent to 39 percent as shown in the following tabulation:

Geographic unit	*1955 (million board feet)*	*1965 (million board feet)*	*Change (percent)*
Western	2,784	3,378	21
North-Central	8,982	11,203	25
Southwestern	1,941	2,627	35
Northeastern	2,577	3,590	39
Southeastern	1,871	2,126	14
South-Central	2,490	3,345	34
State total	20,645	26,269	27

The proportion of softwood volume varied among the geographic units. In the Western, Southwestern, and Southeastern units, softwoods made up about 5 percent of the board-foot volume. In the North-Central and South-Central units, softwoods made up about 12 percent; and in the Northeastern unit, softwoods made up almost 30 percent of the volume.

FS-488953

A mature black cherry tree in north-central Pennsylvania, in the heart of this species' small commercial range.

The largest volume of many species is found in the North-Central unit. This unit contains almost 70 percent (1,725 million board feet) of the black cherry sawtimber volume, 55 percent of the red maple volume (1,400 million board feet), 50 percent of the sugar maple volume (671 million board feet), and 45 percent of the northern red oak volume (2,032 million board feet). All other hardwood species in this unit account for one-third of their total volume.

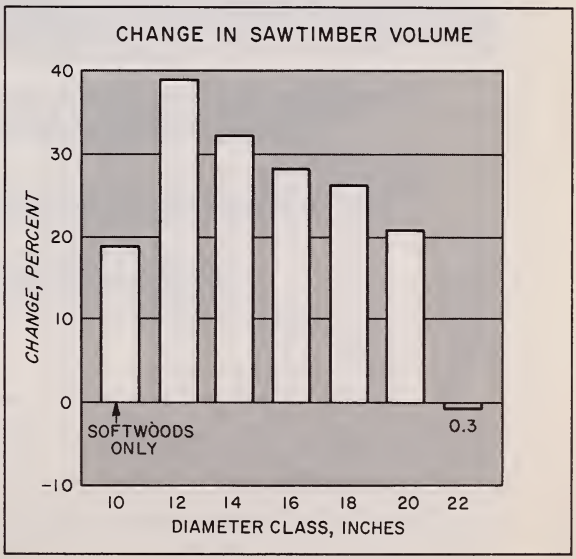
The Southeastern unit, with about 8 percent of the commercial forest land in the State, had the largest volume of yellow-poplar sawtimber—443 million board feet. This represents more than one-third of the total volume of yellow-poplar in the State.

Volume Increased Most in Small Sawtimber

Although the volume of all sawtimber trees increased 27 percent, most of the increase was in the smaller-size sawtimber trees (less than 15.0 inches d.b.h.). The volume in these smaller trees increased by 35 percent. Volume in the larger sawtimber trees--most in demand for products such as lumber and veneer—increased almost 20 percent. In this larger sawtimber class, softwood volume decreased about 2 percent to 1.3 billion board feet, and hardwood volume increased about 22 percent to 10.4 billion board feet.

Best Quality Sawtimber Has Decreased

Standard-lumber log grades are based upon several factors, one of which is minimum log diameter. (See appendix for complete specifications.) Because of this, sawtimber trees in the smaller d.b.h. classes usually fail to have a grade-1 sawlog. The increase in volume of trees over 15.0 inches d.b.h. was small, and this resulted in a lower proportion of grade-1 sawlogs. These



Largest increase in board - foot volume was in the 12-inch diameter class.

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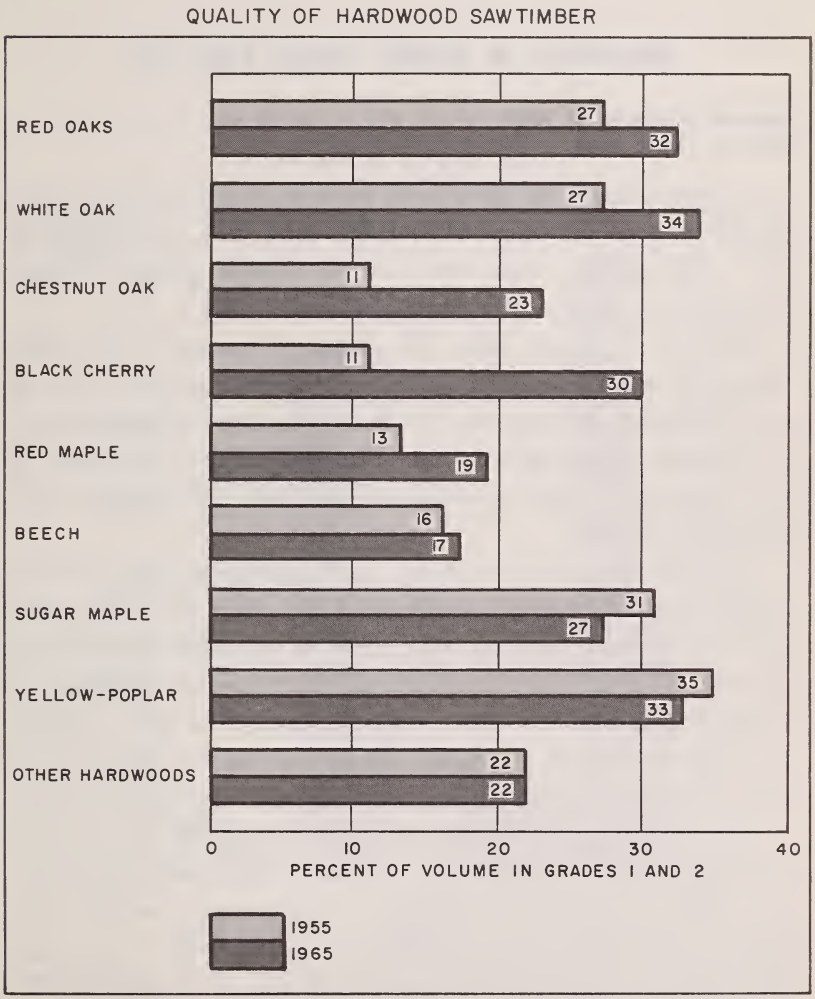
High-quality sawtimber such as this sugar maple tree is becoming scarce.

are the sawlogs most in demand for veneer and high-quality lumber. Grade-1 hardwood sawlogs now make up only 9 percent of the hardwood sawtimber volume in contrast to 12 percent in 1955.

The volume in grade-2 hardwood sawlogs more than doubled between surveys. The proportion of the total volume in grade-2 sawlogs increased from 10 to 19 percent. The combined volume in these better sawlogs (grades 1 and 2) increased about 2.5 billion board feet between surveys. Black cherry sawtimber vol-

ume had the largest percent of increase in the combined grades 1 and 2. Hardwood board-foot volume of log grades 1 and 2 reached 28 percent, up from 22 percent in 1955.

Hardwood volume that could not meet specification for grades 1 and 2 standard-lumber logs increased about 3 billion board feet to 16.7 billion board feet. However, the proportion of total hardwood volume in grade-3 standard-lumber logs and tie-and-timber logs decreased from 78 to 72 percent.



Sawtimber quality (standard-lumber log grade 2 and better) of most hardwoods increased between surveys.

White pine, the principal softwood species that was graded into more than one standard-lumber log grade, makes up only about 6 percent of the total sawtimber volume. Specifications for white pine log grades were changed between surveys; and one additional grade was included in 1965. Direct comparisons of volume in grades 1 and 2 for the two surveys cannot be made; however, it appears that the quality of white pine is not as good as it was on the previous survey.

GROWTH IS THREE TIMES THE CUT

Annual Increase of 400 Million Cubic Feet

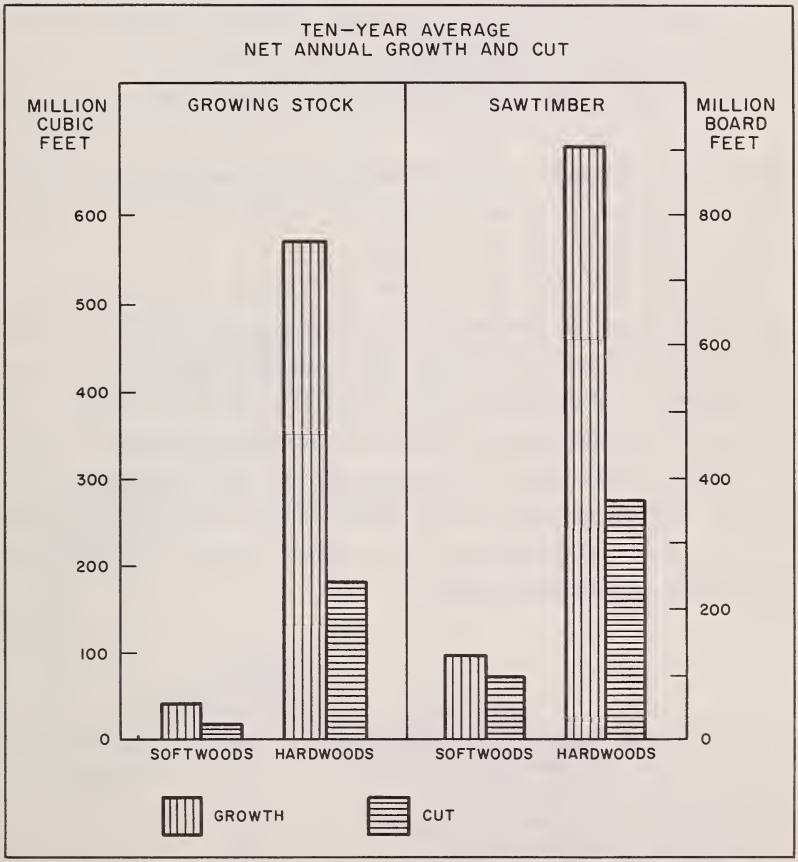
Average annual net growth of growing stock for the 10-year period between surveys is 615 million cubic feet, and the annual cut is 204 million cubic feet. The net annual growth averages 39 cubic feet per acre of commercial forest land.

Softwood volumes make up almost 7 percent of the total volume of growth and 10 percent of the total volume that was cut. Softwood growing stock is being cut more heavily in relation to net annual growth than the hardwoods—50 percent of the softwood growth as compared to about 30 percent of the hardwood growth.

Mortality rates are not severe in Pennsylvania, and since the average annual cut is considerably less than the net annual growth, mortality has had little effect on the relative abundance of most species. The average annual mortality for all species is 66 million cubic feet (less than ½ percent of the inventory volume). Hardwood mortality rate in relation to inventory volume is about 60 percent greater than the softwood mortality rate.

Ingrowth of growing-stock trees that became 5.0 inches d.b.h. and larger since the trees were first measured on the initial survey makes up about 35 percent of the average annual gross growth. The proportion of ingrowth is larger than it was in 1954, when it made up 30 percent of the gross growth. The volume for components of net annual growth is:

Components	*Volume (million cubic feet)*
Growth on growing stock	473
Ingrowth into poletimber	+208
Gross annual growth	681
Annual mortality	—66
Net annual growth	615



The volume of annual growth greatly exceeds the volume of cut for both softwoods and hardwoods.

Annual Net Increase of 560 Million Board Feet

Sawtimber, during the period between measurements, grew at an average net annual rate of 1,001 million board feet, and for the same period an average of 439 million board feet were cut each year. Based on the assumption that annual growth in sawtimber stands is proportional to the inventory volume, 84 percent of the board-foot growth occurs in sawtimber stands. This is equivalent to 115 board-foot growth per acre for sawtimber stands.

Sawtimber volume is being cut more heavily, in relation to annual growth, than growing-stock volume for both softwoods and hardwoods. The cut of softwood sawtimber volume is about 75 percent of the net annual growth, and the cut of hardwood sawtimber volume is 40 percent of the growth.

The average annual mortality of sawtimber trees amounts to 52 million board feet. This is 5 percent of the volume of gross growth. Hardwoods and softwoods had the same rate of mortality in relation to gross growth, but hardwoods had a higher rate in relation to inventory volume.

Ingrowth—the volume of trees that reached sawtimber size—made up almost 70 percent of the gross annual growth in board feet. Softwood sawtimber ingrowth made up slightly more than 40 percent of the gross growth, which is about the same as it was on the initial survey. Hardwood sawtimber ingrowth made up slightly more than 70 percent of the gross growth in the period between surveys, but in 1948 it made up only 50 percent.

The above components of net annual growth of sawtimber are briefly summarized below:

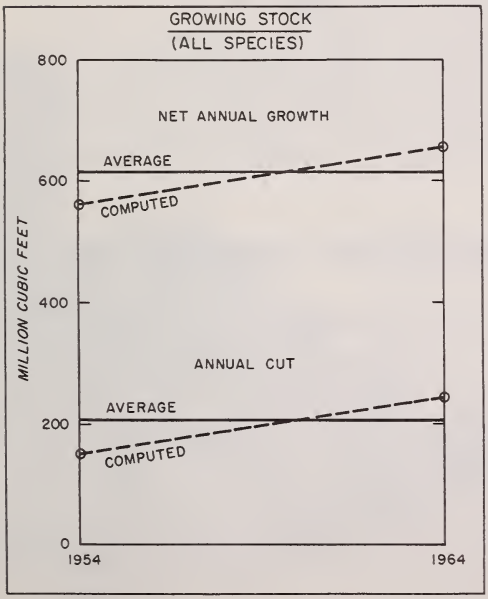
Components	*Growth (million board feet)*
Growth on sawtimber trees	364
Ingrowth into sawtimber	+689
Gross annual growth	1,053
Annual mortality	—52
Net annual growth	1,001

Net Annual Growth Is Increasing

The average net annual growth estimates in this report were computed from remeasured plot data, but the net annual growth estimates for 1954 reported in the first timber resource report[2] were derived from increment-core measurements. Growth estimates for 1954 were recomputed on the basis of the average annual growth estimates from the remeasured plots. The volume of net annual growth of all growing stock increased from 557 million cubic feet in 1954 to 650 million cubic feet in 1964.

The volume of annual growth increased for the hardwoods and decreased for the softwoods. Hardwood growing stock in 1964 was growing at a rate of 610 million cubic feet per year as compared to 512 million cubic feet per year in 1954. Annual growth of softwood growing stock decreased during the same period from 45 million to 40 million cubic feet.

[2] Ferguson, R. H. THE TIMBER RESOURCES OF PENNSYLVANIA. NE. Forest Exp. Sta. 46 pp., illus. Upper Darby, Pa. 1958.



Average net annual growth for the 10-year period is three times the annual cut, and the 1964 net annual growth is almost 100 million cubic feet more than in 1954.

The net annual growth rate of sawtimber increased from 910 million to 1,100 million board feet at the end of the 10-year period. Annual growth, in millions of board feet, increased from 800 to 1,010 for the hardwood species and decreased from 110 to 90 for the softwood species.

Timber Products From The Resource

Total output of timber products in 1964 from growing stock and other sources added up to 173 million cubic feet, a drop of 22 million cubic feet from the 1954 output from all sources. However, the cut from growing stock increased from 154 million cubic feet to 160 million cubic feet in 1964. The output from plant byproducts also increased—13 million cubic feet as compared to 11 million cubic feet in 1954. One reason for the large difference in total volume of output was the decrease in the utilization of cull trees, hardwood limbs, dead trees, and trees from noncommercial and nonforest land. Fuelwood from such sources decreased from 37 million cubic feet in 1954 to less than 1 million cubic feet in 1964.

Sawlog production, in terms of cubic feet of roundwood, made up 55 percent of the total output, as compared to 49 percent of the total in 1954. Pulpwood production, the next largest volume for any product, made up almost 30 percent; and all other products accounted for about 15 percent of the total output from roundwood.

LUMBER PRODUCTION INCREASED

Annual lumber production in Pennsylvania decreased rapidly for about 30 years after its peak year of 1899, when more than 2 billion board feet were cut.[3] A low point in lumber production (200 million board feet) was reached in 1932; then annual lum-

[3] Steer, Henry B. Lumber production in the United States, 1799-1946. U. S. Dep. Agr. Misc. Pub. 669. 233 pp. 1948.

FS-489005

A truckload of sawlogs (about 2,400 board feet) from the Allegheny National Forest.

Lumber stacked for air drying, at Marienville, Forest County.

FS-488983

ber production began to increase once more. Lumber production reported for 1954 was about 495 million board feet. Ten years later lumber production reached 545 million board feet (based upon a 100-percent canvass by the Pennsylvania Department of Forests and Waters), an increase of about 50 million board feet.

Hardwood species made up most of the volume that was converted into lumber. They accounted for 93 percent of the board-foot volume in 1964; just 10 years previously they had accounted for 83 percent.

During this 10-year period, the number of sawmills producing 1 million or more board feet of lumber per year increased from slightly less than 100 to more than 150. The total number of active sawmills in the State decreased from more than 2,000 to about 1,000. The decrease was mainly in the number of small portable sawmills that moved from one forest tract to another.

PULPWOOD PRODUCTION INCREASED

Pulpwood production from roundwood totaled 575,000 cords in 1964, an increase of 80 percent over that reported for 1954. Hardwood species made up almost 85 percent of the volume. Production of pulpwood by major species groups is shown in the tabulation below:[4]

Species group	*Production (thousand cords)*
Hemlock and tamarack	8.5
Pine	81.0
Aspen and yellow-poplar	7.4
Oak and hickory	231.4
Other hardwoods	247.2
All species	575.5

In addition to the output from roundwood, the equivalent of 31,000 cords of pulpwood was produced from plant byproducts in the form of chips and was used within the State. Most of the chipped pulpwood was from the hardwood species. All together 606,500 cords of pulpwood from roundwood and plant bypro-

[4] Kingsley, Neal P. PULPWOOD PRODUCTION IN THE NORTHEAST, 1964. U. S. Forest Serv. Resource Bull. NE-5. 27 pp., illus. NE. Forest Exp. Sta. 1967.

Photo credit: The Glatfelter Pulp Wood Co.

Mechanical loading of pulpwood.

Photo credit: The Glatfelter Pulp Wood Co.

Unloading pulpwood truck.

Photo credit: Charmin Paper Products Co.

Paper tissue machine at the most recently constructed pulpmill in Pennsylvania.

ducts in the form of chips were produced in Pennsylvania, A total of 53,500 cords of pulpwood was shipped out of the State.

Eleven pulpmills are located in Pennsylvania; the largest concentration is in the central part of the State. Another pulpmill, under construction in Wyoming County, will be ready for production in 1967. This will boost pulpwood production higher than the amount shown for 1964.

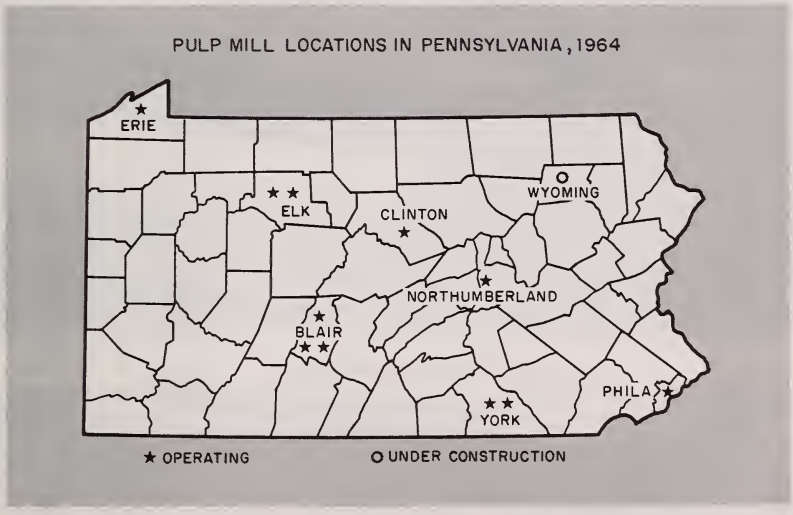
OTHER PRODUCTS DECREASED

All other products, excluding sawlogs and pulpwood, required 36.5 million cubic feet of wood, of which about 30 percent (10.7 million cubic feet) came from plant byproducts. One-half of this volume (18.2 million cubic feet) was used for fuelwood. Volumes for all products other than fuelwood in 1964 are shown below:

Product	*Volume (million cubic feet)*
Mine timbers	3.8
Veneer logs and bolts	2.9
Cooperage logs and bolts	.8
Posts	.2
Miscellaneous industrial wood	10.6
Total	18.3

Miscellaneous industrial wood includes chemical wood, handle stock, particle board, turnery bolts, and the like. Practically all the volume used was from hardwood species.

The total volume of output for all other products, including fuelwood, decreased 47 percent since 1954. Fuelwood production from both roundwood and plant byproducts accounted for most of that decrease; it dropped by 38 million cubic feet. All other products—excluding sawlogs, pulpwood, and fuelwood—decreased slightly during the 10-year period, from 21.1 million cubic feet to 18.3 million cubic feet.



Seven companies have 11 pulpmills that use pulpwood or wood chips. Another company is constructing a pulpmill in Wyoming County.

Photo credit: Department of Forests and Waters.

Pennsylvania veneer production,
New Freedom, York County.

Veneer log on lathe

Veneer sheets coming from lathe.

Veneer ready for shipping.

Opportunities For Management

In Pennsylvania there are one National Forest, State Forests, and thousands of privately owned timber stands. The Allegheny National Forest and all the State Forests together total 2.2 million acres; other publicly owned forest land amounts to 1.2 million acres; and all other forest land totals 13.3 million acres. It is on these 13 million acres of privately owned forest land (80 percent of the commercial forest area) that the need is greatest for forest management to bring about full stocking of timber stands, better species composition, and greater yields of quality timber.

Management plans are already in operation on most of the State-owned forest land and on the Allegheny National Forest. Advice and help are available to private forest landowners through the Pennsylvania Department of Forests and Waters.

STAND IMPROVEMENT

Growing-stock trees of relatively high vigor and quality, for the site and type, that have no defects that preclude potential use for the primary product, and that would be left in silvicultural cutting or in cultural operations as potentials for intermediate or final harvest, are designated as desirable trees. Only 5 percent of the commercial forest land in the State is in stands that have a desirable tree stocking of 40 percent or more.

In a study of timber-management opportunities in Pennsylvania, Webster[5] concluded that high-quality timber production could be increased most efficiently by first concentrating effort on the thinning of hardwood-poletimber stands on the better sites.

Only a small part of the 786,000 acres that are medium to well stocked with desirable trees falls into the hardwood-pole-

[5] Webster, Henry H. TIMBER MANAGEMENT OPPORTUNITIES IN PENNSYLVANIA. NE. Forest Exp. Sta., Sta. Paper 137. 37 pp., illus. Upper Darby, Pa. 1960.

timber category—perhaps 100,000 acres, more or less. Thinning operations in hardwood-poletimber stands should remove all cull trees 5 inches d.b.h. and larger and one-half of the low-quality trees in each diameter class 5 inches and larger.

The result of this kind of thinning would be a stand that would produce more than one dollar's worth of additional timber for every dollar invested.

Most of the commercial forest land in the State is less than 40 percent stocked with desirable trees. It is feasible to carry out a cleaning and cull-tree removal on some of this land that would bring in a profitable return on the investment. This operation would consist of removing or girdling all cull trees 2 inches d.b.h. and larger, all low-value hold-over trees (12 inches d.b.h. and larger) from former stands, and one-half of low-quality species in each diameter class from 2 to 10 inches.

BETTER STOCKING

Almost 2 million acres of commercial forest land either are poorly stocked with growing-stock trees or are nonstocked. This land has a low growth potential in its present condition. Much of the area would have to have some site preparation through silvicides, girdling, and/or root-raking before planting or seeding.

Some of the 300,000 acres of forest land that are less than 10 percent stocked are abandoned farm cropland and pasture. Much of this poorly stocked forest land could be machine-planted. The cost of field planting was about $20 per thousand trees in 1960 and now may be slightly greater.

The State tree nurseries have supplied planting stock at minimum cost to landowners for many years. Most of the planting has been with white pine, red pine, and Norway spruce on open or lightly stocked forest land. The total number of seedlings grown and distributed for planting now amounts to 436 million trees. This would be equivalent to a planted area of over 400,000 acres if all seedlings survived.

Outlook For The Timber Supply

DEMAND FOR TIMBER PRODUCTS WILL INCREASE

The demand for timber products from the timber resources in Pennsylvania is assumed to be quite like that for the Nation as a whole. Between 1962 and 2000 the National demand is anticipated to increase about 80 percent.[6] This is tied in to an increase of 74 percent in population and a slight increase of per capita consumption from 63 to 64 cubic feet.

Consumption of roundwood in the United States from all sources by the year 2000 is predicted to be as follows:

- Sawlog consumption will increase 42 percent.
- Veneer and pulpwood consumption each will increase 2.7 times.
- Miscellaneous industrial wood consumption will decrease slightly.

The timber-products output from roundwood in Pennsylvania for 1954 and for 1964 shows that cubic-foot volume of sawlogs and veneer logs increased 1 percent; pulpwood volume increased 80 percent; fuelwood volume decreased 60 percent; and volume of miscellaneous industrial products decreased 20 percent.

As the timber inventory increases in the larger diameter classes, we can expect a greater production of sawlogs and veneer logs than in the past 10 years. Just recently a new veneer and lumber mill has been built; a dimension-stock mill has been established; and several new furniture plants have been located within the State.

Fuelwood will continue to decrease to a point where it will make up an insignificant amount of the total products output. It has decreased from 25 to 11 percent of the total output volume

[6] United States Forest Service. TIMBER TRENDS IN THE UNITED STATES. Forest Resource Rep. 17. 235 pp., illus. 1965.

in 1964, and only two-thirds of this came from growing-stock trees. Also, in line with the national trend, the volume of output of miscellaneous industrial products will continue to decline.

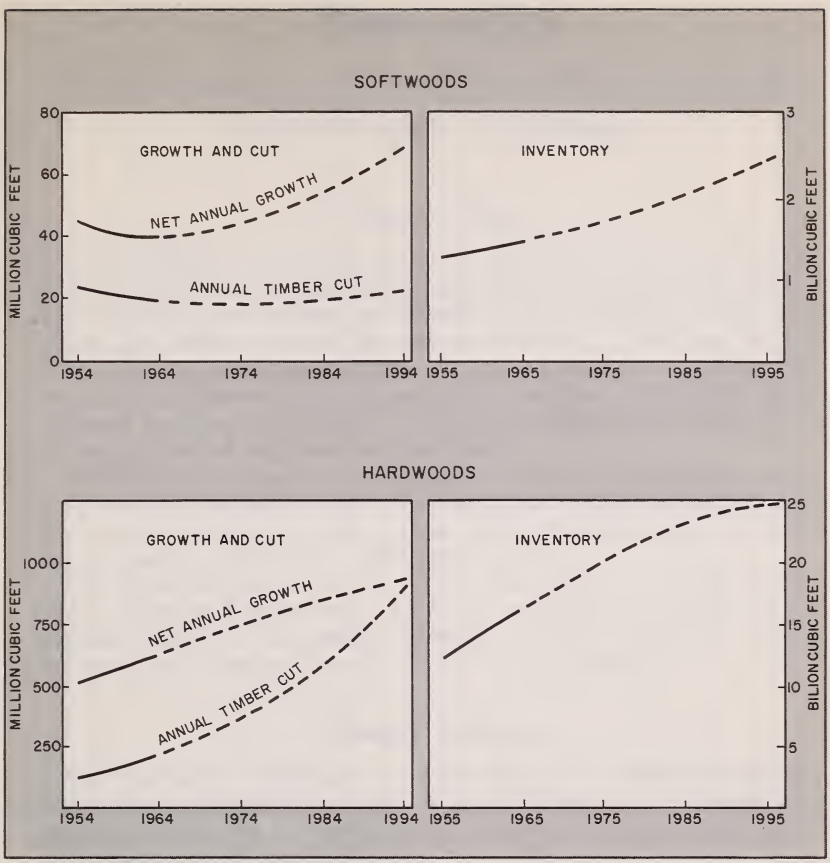
The demand for pulpwood increased considerably in the period between surveys. This increased demand is due to expansion of existing woodpulp mills in Pennsylvania. Between 1952 and 1965 these mills expanded their pulping capacity by 75 percent. Production decreased slightly in 1965, but this is a temporary decline and the production is expected to rise again soon. Part of the decline was due to the increased use of chips from plant byproducts. (Volume of chips doubled between 1964 and 1965.) A new integrated pulp and paper mill is being built in Wyoming County in the northeastern part of the State. Its wood requirements will further increase the demand for pulpwood.

ANNUAL CUT CAN BE GREATLY INCREASED

Based upon the 10-year period between surveys, the average annual timber cut in Pennsylvania is 204 million cubic feet. The average annual growth for the same period is three times as great—615 million cubic feet. Even for this short a period, it is evident that the amount of timber cut can be greatly increased, and at the same time the average volume per acre of forest land can be increased.

For some species, the annual cut should be decreased. At present their volume of growth is less than the volume being cut. Pitch pine and Virginia pine are the only softwoods that are being overcut. Their inventory volume both of growing stock and of sawtimber dropped by one-third because of the unfavorable growth-cut ratio.

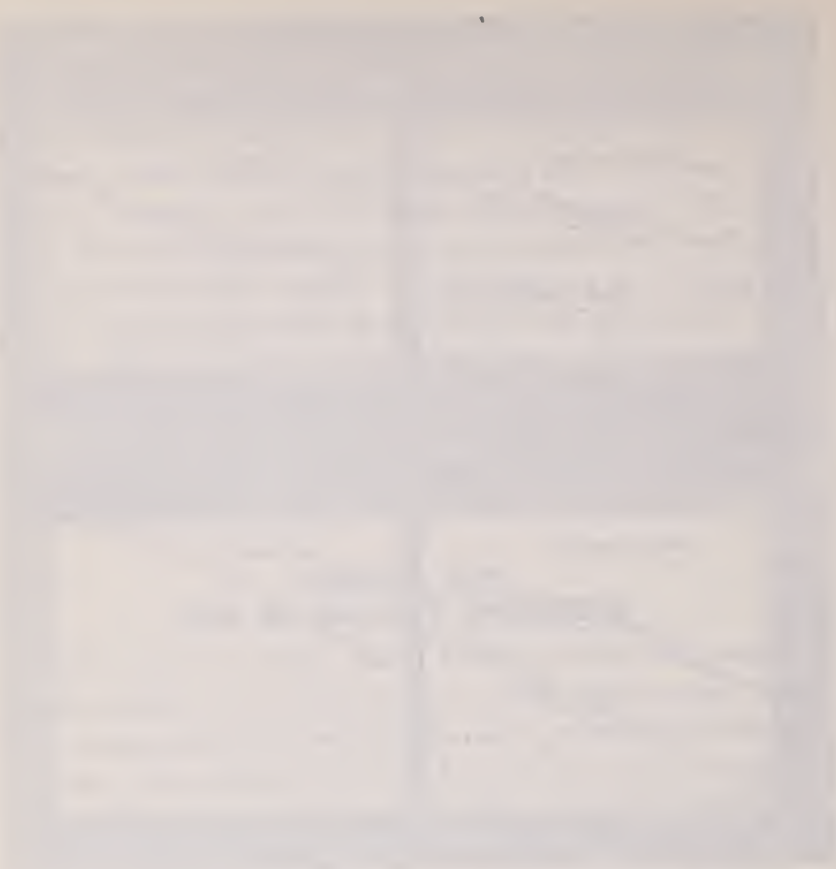
Only three hardwood species were overcut—beech, yellow birch, and basswood. They made up around 5 percent of the hardwood inventory volume in 1955. Their volume of growing stock dropped about 20 percent and their volume of sawtimber dropped about 30 percent. Now they make up less than 3 percent of the hardwood inventory volume. All other species are growing at a much faster rate than they are being cut.



Net annual growth is more than enough to sustain a much greater annual cut.

Although the cut of softwood growing stock decreased between surveys, it seems reasonable to expect the softwood cut to level off for a few years and then increase at a moderate rate each year thereafter.

The annual cut of hardwoods has increased considerably during the past 10 years, and it is expected to increase in line with the anticipated increased demand for timber products for the next 30 years. Even with the increased demand, at the end of the 30-year projections net annual growth of some hardwoods will still exceed the annual cut.



Appendix

DEFINITIONS OF TERMS

Forest Area

Forest-land area.—This includes: (a) lands that are at least 10 percent stocked with trees of any size and are capable of producing timber or other wood products, or of exerting an influence on the climate or on the water regime; (b) land from which the trees described in (a) have been removed to less than 10 percent stocking and that has not been developed for other use; and (c) afforested areas. (Forest tracts of less than 1 acre, isolated strips of timber less than 120 feet wide, and abandoned fields and pastures not yet 10 percent stocked with trees are excluded.)

Commercial forest-land area.—Forest land that is (a) producing, or physically capable of producing, crops of industrial wood; (b) economically available now or prospectively; and (c) not withdrawn from timber utilization through statute, ordinance, or administrative order.

Noncommercial forest-land area.—Forest land that is (a) withdrawn from timber utilization through statute, ordinance, or administrative order, but that otherwise qualifies as commercial forest land; or (b) incapable of yielding industrial wood products because of adverse site conditions.

Timber Volume

Growing stock.—Net volume, in cubic feet, of live sawtimber and poletimber trees (see definitions under "Class of Timber") from stump to a minimum 4-inch top (of central stem) outside bark. Net volume equals gross volume less deduction for rot.

Sawtimber volume.—Net volume in board feet, International 1/4-inch rule, of merchantable sawlogs in live sawtimber trees. Net volume equals gross volume less deductions for rot, sweep, and other defects that affect use for lumber.

Standard cord.—A unit of measure for stacked wood encompassing 128 cubic feet of wood, bark, and air space. Cord estimates can be derived from cubic-foot estimates by applying a factor of 80 cubic feet of wood (inside bark) per rough cord.

Tree Classes

All trees.—All live sawtimber and poletimber trees, saplings and seedlings, and all live rough or rotten trees.

Growing-stock trees.—All live sawtimber trees, poletimber trees, and saplings and seedlings, except rough or rotten trees. (See definitions under "Class of Timber.")

Desirable trees.—All growing-stock trees that now or prospectively have positive stumpage value and are likely to remain in the stand for at least 10 years if not cut or otherwise deliberately killed.

Sawtimber trees are considered to have positive stumpage value now if they have a grade-1 or -2 butt log. Exceptions are made for several species that can have a lower quality butt log.

Poletimber trees are considered to have positive stumpage value if they will meet the above sawtimber tree requirements before becoming mature.

Stocking Classes

Stocking is the degree of occupancy of land by trees, measured by basal area and/or the number of trees in a stand compared to the basal area and/or number of trees required to fully utilize the growth potential of the land. The actual stocking at a point was evaluated against a standard of 75 square feet of basal area per tree for trees 5.0 inches d.b.h. and larger, or its equivalent in numbers of trees per acre for seedlings and saplings. The stocking percentage for a sample plot is derived from the stocking for each of the 10 points. Three categories of stocking are used:

All live trees.—These are used in the classification of forest land and forest types.

Growing-stock trees.—These are used in the classification of stand-size classes.

Desirable trees.—These are used in the classification of area-condition classes.

Stand-Size Classes

Stand.—A growth of trees on a minimum of 1 acre of forest land that is at least 10 percent stocked by forest trees of any size.

Sawtimber stands.—Stands that are at least 10 percent stocked with growing-stock trees and have half or more of this stocking in sawtimber and poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

Poletimber stands.—Stands that are at least 10 percent stocked with growing-stock trees and have half or more of this stocking in sawtimber and poletimber trees, and with poletimber stocking exceeding that of sawtimber stocking.

Sapling-and-seedling stands.—Stands that are at least 10 percent stocked with growing-stock trees and in which saplings and/or seedlings make up a plurality of this stocking.

Nonstocked areas.—Commercial forest lands that are less than 10 percent stocked with growing-stock trees.

Area-Condition Classes

Desirable.—Areas that are stocked 70 percent or more with desirable trees.

Moderate and favorable.—Areas that are stocked 40 to 70 percent with desirable trees and in which 30 percent or less of the area is controlled by other trees and/or inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees.

Moderate and unfavorable.—Areas that are stocked 40 to 70 percent with desirable trees and in which more than 30 percent of the area is controlled by other trees and/or inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees.

Poor but favorable.—Areas that are stocked less than 40 percent with desirable trees and have adequate seed sources and seedbeds favorable to natural restocking.

Poor but unfavorable.—Areas that are stocked less than 40 percent with desirable trees and have inadequate seed sources and/or seedbeds unfavorable to natural regeneration.

Forest Cover Types

The forest-type classification of each sample plot is based upon the majority of stocking by all live trees of various species. When no indicator species makes up a majority, the forest type is determined on the basis of plurality of stocking.

White pine.—Forests in which 50 percent or more of the stand is eastern white pine. In Pennsylvania it includes a small acreage in the hemlock type.

Spruce.—Forests in which 50 percent or more of the stand is any species of spruce.

Virginia-pitch pine.—Forests in which 50 percent or more of the stand is Virginia pine, pitch pine, or other yellow pines, singly or in combination.

Oak-pine.—Forests in which 50 percent or more of the stand is hardwood, usually upland oaks, but in which pines make up 25 to 49 percent of the stand. This type includes a small acreage in the eastern redcedar-hardwood type.

Oak-hickory.—Forests in which 50 percent or more of the stand is upland oaks or hickory, singly or in combination, except where pines comprise 25 to 49 percent, in which case the stand would be classified oak-pine. It also includes the yellow-poplar—oak forest type.

Oak-gum.—Bottomland forests in which 50 percent or more of the stand is blackgum, sweetgum, or oaks, singly or in combination, except where pines comprise 25 to 49 percent, in which case the stand would be classified as oak-pine.

Elm-ash-red maple.—Forests in which 50 percent or more of the stand is American elm, black ash, or red maple, singly or in combination. When all three species are present, this signifies a wet site. In Pennsylvania predominantly red maple stands on upland sites make up most of the acreage in this broad type.

Maple-beech-birch.—Forests in which 50 percent or more of the stand is sugar maple, beech, or yellow birch, singly or in combination. It includes the black cherry forest type.

Aspen-birch.—Forests in which 50 percent or more of the stand is aspen, paper birch, gray birch, or pin cherry, singly or in combination.

Class of Timber

Sawtimber trees.—Trees of commercial species that: (a) are of the following minimum diameters at breast height—softwoods 9.0 inches and hardwoods 11.0 inches; and (b) contain at least a 12-foot merchantable sawlog. (A merchantable sawlog is the portion of a live tree that meets the minimum log-grade specifications, as defined under log-grade classification.) The sawlog portion is that part of the tree between the stump and the top of the last merchantable sawlog.

Poletimber trees.—Trees of commercial species that meet regional specifications of soundness and form, and are of the following diameters at breast height; softwoods 5.0 to 9.0 inches; hardwoods 5.0 to 11.0 inches. Such trees will usually become sawtimber trees if left to grow.

Sapling-and-seedling trees.—Trees of commercial species that are less than 5.0 inches in diameter at breast height and of good form and vigor.

Rough or rotten trees.—Live trees of sawtimber or poletimber size that do not contain at least one 12-foot sawlog now or prospectively because of roughness, poor form, or rot, or because they are of noncommercial species.

Log Grades

The standard-lumber log grades for hardwoods, white pine, and the yellow pines used in the resurvey of Pennsylvania are outlined in the following figures:

HARDWOOD TIE-AND-TIMBER LOGS

Grade Factors		*Specifications*
Position in tree		Butts and uppers
Scaling diameter (inches)		8+
Length, without trim (feet)		8+
Clear cuttings		No requirements. Not graded on cutting basis.
Max. sweep allowance		One-fourth d.i.b. of small end for half logs, and one-half d.i.b. for logs 16 feet long.
Sound surface defects permitted	Single knots	Any number, if none has an average collar* diameter that is more than one-third of log diameter at point of occurrence.
	Whorled knots	Any number, provided the sum of the collar diameters does not exceed one-third the log diameter at point of occurrence.
	Holes	Any number not exceeding knot specifications if they do not extend more than 3 inches into the contained tie or timber.
Unsound** surface defects permitted		Any number and size if they do not extend into contained tie or timber. If they extend into contained tie or timber, they shall not exceed size, number, and depth of limits for sound defects.

* Knot collar is the average of the vertical and horizontal diameters of the limb or knot swelling as measured flush with the surface of the log.

** Interior defects are not visible in standing trees. They are considered in grading cut logs. No interior defects are permitted except one shake not more than one-third the width of the contained tie or timber, and one split not more than 5 inches long.

HARDWOOD STANDARD-LUMBER LOGS

*Grade Factors**		*Specifications*							
		Log grade 1			*Log grade 2*				*Log grade 3*
Position in tree		Butts only	Butts & uppers		Butts & uppers				Butts & uppers
Minimum diameter (inches)		[1] 13-15	16-19	20+	[2] 11	12+			8+
Minimum length (feet)		10+	10+	10+	10+	8-9	10-11	12+	8+
Clear** cuttings on each of the 3 best faces	Min. length (feet)	7	5	3	3	3	3	3	2
	Max. number	2	2	2	2	2	2	3	—
	Min. yield face length	5/6	5/6	5/6	2/3	3/4	2/3	2/3	1/2
Max. sweep and crook allowance; % of gross vol.		15			30				50
Max. cull and sweep allowance; % of gross vol.		[3] 40			[4] 50				50

* End defects, although not visible in standing trees, are important in grading cut logs. Instructions for dealing with this factor are contained in U.S. Forest Prod. Lab. Rpt. D1737.

** A clear cutting is a portion of a face free of defects, extending the width of the face. A face is one-fourth the surface of the log as divided lengthwise.

[1] Ash and basswood butts can be 12 inches if otherwise meeting the requirements for small No. 1's.

[2] 10-inch logs of all species can be No. 2 if otherwise meeting the requirements for small No. 1's.

[3] Otherwise No. 1 logs with 41-50 percent cull can be No. 2.

[4] Otherwise No. 2 logs with 51-60 percent cull can be No. 3.

WHITE PINE LOG GRADES
TRIAL SPECIFICATIONS (REVISED)—1963

Log grade	*Minimum size*		*Sweep or crook allowance*	*Total cull allowance including sweep*	*Maximum weevil injury*	*Allowable knot size on 3 best faces or minimum clearness on 4 faces*
	Diameter	*Length*[1]				
	Inches	*Feet*	*Percent*	*Percent*	*Number*	*Inches*
No. 1	12 & 13	8-16	20	50	0	4 faces free of knots ½″ or larger, full length of log.
(Select)	14+	10-16	20	50	0	2 faces free of knots ½″ or larger, full length of log; or 4 faces free of knots ½″ or larger 50 percent of log (6′ minimum length)[2].
No. 2 (Finish)	6+	8-16	30	50	0	Sound red knots $\leqq \frac{D}{6}$ and no larger than 3″[3]. Black knots: Butt logs $\leqq$ D/12 and no larger than 1½″. Upper logs $\leqq$ D/10 and no larger than 1½″, or 4 faces free of knots ½″ or larger, 50 percent length of log.
No. 3 (Premium)	6+	8-16	40	50	8′ logs: 1 weevil; 10′+ logs: 2 weevils	Sound red knots $\leqq$ D/3 and no larger than 5″. Black knots $\leqq$ D/6 and no larger than 2½″.
No. 4 (Standard)	6+	8-16	50	50	No limit	No limit

[1] Plus trim.

[2] If the sum of the diameters of sound red knots plus 2X (sum of the diameters of dead or black knots) in inches is $\leqq$ ½ the diameter of the log (in inches).

[3] $\leqq$ means equal to or less than.

YELLOW PINE LOG GRADES

Log grade	*Minimum diameter and maximum aggregate knot criteria*		
	With 4 visible faces	*With 3 visible faces*	*With 2 visible faces*
No. 1	D = >17 and 5K = <D	D = >17 and 7K = <D	D = >17 and 10K = <D
No. 2	D = >10 and 2K = <D <5K	D = >10 and 3K = <D <7K	D = >10 and 4K = <D <10K
No. 3	D = >5 and D <2K	D = >5 and D <3K	D = >5 and D <4K
No. 4	D = >5, but not qualified for higher grade after compliance with the following degrade rules:		

(A) Degrade any log one grade if D equals or is less than 3 times sweep of at least 3 inches.

(B) Then degrade any non-Grade No. 4 log one grade if massed heart-rot hyphae visible on circumferential log surface suggest that fruiting has occurred or is imminent.

(C) Then degrade any Grade No. 3 log to Grade No. 4 if bad knots are too dispersed for containment in a 90-degree radial sector extending 1/4 of log length.

[1] From Forest Service, "1953 Interim Log Grades for Southern Pine," October 1953.

Annual Growth and Cut

Net annual growth of sawtimber.—The average annual change (resulting from natural causes) in net board-foot volume of live sawtimber on commercial forest land during the period between surveys.

Ingrowth of sawtimber.—The net board-foot volume of trees that first became sawtimber trees during the period between surveys as measured at the end of the period, and converted to an average annual ingrowth.

Annual mortality of sawtimber.—The average net board-foot volume removed yearly from live sawtimber on commercial forest land through death from natural causes.

Annual cut of live sawtimber.—The net board-foot volume of live sawtimber trees cut or killed in logging, land-clearing, or cultural operations on commercial forest land during a year. For tables 21 and 23, the average annual cut of sawtimber is based on trend levels between 1954 and 1964 as developed from remeasured plots. For table 31, sawtimber cut by products for 1964 is based on estimates of timber products output obtained from a canvass of forest industries.

Net annual growth of growing stock.—The average annual change (resulting from natural causes) in net cubic-foot volume of live sawtimber and poletimber trees on commercial forest land.

Ingrowth of growing stock.—The net cubic-foot volume of trees that first became a part of growing stock during the period between surveys as measured at the end of the period, and converted to an average annual ingrowth.

Annual mortality of growing stock.—The average net cubic-foot volume removed yearly from growing stock through death from natural causes.

Annual cut of growing stock.—The net cubic-foot volume of live sawtimber and poletimber trees cut or killed in logging, land-clearing, or cultural operations on commerical forest land during a year. For tables 21 and 22, the average annual cut of growing stock is based on trend levels between 1954 and 1964 as developed from remeasured sample plots. For table 30, growing stock cut by products for 1964 is based on estimates of timber products output obtained from a canvass of forest industries.

FOREST-SURVEY METHODS

Forest area and timber volume estimates are based upon information obtained from two sets of aerial photographs (10 or more years between the two) and sample photo plots and ground plots. Photo plots were pinpointed on each set of aerial photographs so they were distributed uniformly over the entire State. Each photo plot was classified as either forest or nonforest, and each forest plot was classified into sampling strata. These strata were stand-size classes on the initial survey and were cubic-foot-volume-per-acre classes on the resurvey.

Field crews on the first survey inspected on the ground many sample plots selected from the photo plots. Area, volume, and growth data were recorded. These data were the basis for *The Timber Resource in Pennsylvania,* published in 1958.

A sample of 859 of the initial ground plots were visited on the resurvey. These consisted of 158 plots on the Allegheny National Forest that was one of the 10 geographic sampling units. It also included 175 plots on State

forest land that made up three more sampling units. The remaining 526 plots were on all other land and were distributed throughout the State in six sampling units. Plot centers were relocated and trees were retallied. The two tallies were reconciled with each other on the plot.

Data from the remeasured plots were used to obtain the first part of a combined estimate of current forest area and timber volume, and estimates of net annual growth, mortality, and timber cut. Regression equations calculated from the remeasured plots brought up to date the volume estimates of the first survey.

On the initial survey, each sawtimber tree was measured for d.b.h., merchantable sawlog height, and number of bolts in the upper stem. These were used with appropriate volume tables for each tree's volume in cubic feet and in board feet. On the resurvey, the number of upper stem bolts were recorded for sawtimber trees on only the remeasured plots. Data from the remeasured plots were developed into gross cubic-foot volume equations for 17 species groups from which volume per tree was obtained. Board-feet per cubic foot ratios were also developed to obtain board-foot volume estimates.

In addition to the remeasured plots, 5,117 new ground plots were established from photo plots on the most recent aerial photographs. More than half of these—2,998—were on the Allegheny National Forest, which was sampled much more intensively than the other units. On State Forest land 456 new ground plots were established. On all other land in the six geographic units, a total of 1,663 new ground plots were established.

The two sets of estimates were weighted by their variance reciprocals and combined. This resulted in the new estimate of acreage for each forest area breakdown shown in the tables of this report. The associated sampling errors for these breakdowns were also obtained. The new estimates of timber volumes were produced in the same way.

Estimates of average net annual growth, mortality, and timber cut were based entirely upon the 860 remeasured plots. The volume of growing stock on the plots at time of remeasurement (consisting of both live growing-stock trees and trees that were cut) minus the volume of growing-stock trees on the plots at the time of the forest survey equals net volume growth for the years between measurement.

Stump measurements were used to estimate volumes of cut trees. Measurement of dead trees that were initially classified as live growing-stock trees provided the estimates of mortality.

These estimates for the period between surveys were converted to average net annual growth, mortality, and timber cut by dividing by the number of years between measurements for each plot.

Estimates of timber cut for the single year of 1964 were based upon a canvass of the forest industries, and do not coincide with the average annual cut estimates for the 10-year period that were calculated from the remeasured plots.

Estimates of timber volumes for 1955 were recomputed for more reliable estimates of changes between surveys. The differences between reported and computed volumes for 1955 do not reflect real changes but are the result of differences in volume tables, field interpretations of growing stock, height measurements, and technique errors. The recomputed volume estimates instead of those shown in the 1958 timber resource report were used whenever differences between the two surveys were discussed.

RELIABILITY OF THE ESTIMATES

The forest-area and timber-volume data presented in this report are based on a carefully designed sample of forest conditions throughout Pennsylvania. However, since neither every acre nor every tree in the State was measured, the figures in this report are the best estimates. A measure of the reliability of these estimates is given by a sampling error. Each estimate in this report had a computed sampling error. Included with most of the State statistical tables are the corresponding sampling errors for row totals and column totals. For individual counties, only the sampling errors of total commercial forest area, total growing-stock volume, and total board-foot volume are shown.

Briefly, here is how the sampling error indicates reliability. Our report of the total growing-stock volume in Pennsylvania, 17,860 million cubic feet, has an associated sampling error of 1.3 percent (232 million cubic feet). This means that our best estimates of the total growing-stock volume in 1965 is 17,860 million cubic feet. And if there are no errors in procedure, the odds are 2 to 1 that if we repeated the resurvey in the same way, the new estimate of growing-stock volume would be between 17,628 million and 18,092 million cubic feet (17,860 $\pm$232). Similarly, the odds are 19 to 1 that it would be within $\pm$464 million cubic feet of the present estimate, and 300 to 1 that it would be within $\pm$696 million cubic feet.

The computed sampling error is not a complete measure of reliability; there are other sources of error that this term does not include. There could be imperfections in our volume tables and equations and errors in field measurement. Procedural errors were kept to a minimum by careful training of all personnel, frequent inspection of field work, and application of the most reliable survey methods.

Computed sampling errors for the totals shown in the statistical tables are:

	Sampling error (percent)
Commercial forest area (16.7 million acres)	1.4
Growing-stock volume (17.9 billion cubic feet)	1.3
Sawtimber volume (26.3 billion board feet)	4.0
Net annual growth (0.6 billion cubic feet)	5.0
Annual timber cut (0.2 billion cubic feet)	14.0

SPECIES TALLIED

Only the commercial tree species[7] found on forest survey sample plots in Pennsylvania are listed below. Other species that are found in Pennsylvania are not included.

[7] Little, Elbert L., Jr. CHECK LIST OF NATIVE AND NATURALIZED TREES OF THE UNITED STATES (INCLUDING ALASKA). U. S. Dep. Agr., Agr. Handbook 41, 472 pp. 1953.

Softwoods

Virginia pine	*Pinus virginiana*
Other yellow pines:	
Pitch pine	*Pinus rigida*
Table-Mountain pine	*Pinus pungens*
Eastern white pine	*Pinus strobus*
Red pine	*Pinus resinosa*
Eastern hemlock	*Tsuga canadensis*
Other softwoods:	
Spruce	*Picea* species
Tamarack	*Larix laricina*
Eastern redcedar	*Juniperus virginiana*
Northern white-cedar	*Thuja occidentalis*

Hardwoods

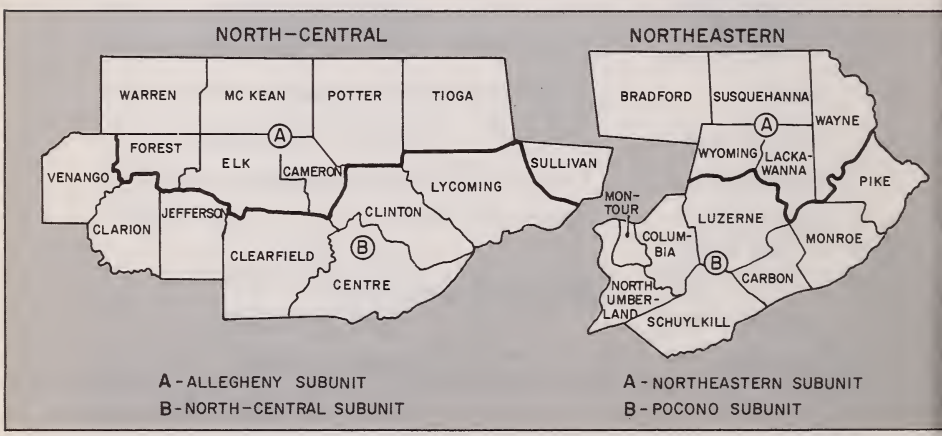
Select white oaks:	
White oak	*Quercus alba*
Swamp white oak	*Quercus bicolor*
Bur oak	*Quercus macrocarpa*
Select red oaks:	
Northern red oak	*Quercus rubra*
Other white oaks:	
Chestnut oak	*Quercus prinus*
Post oak	*Quercus stellata*
Other red oaks:	
Black oak	*Quercus velutina*
Scarlet oak	*Quercus coccinea*
Pin oak	*Quercus palustris*
Willow oak	*Quercus phellos*
Hickory	*Carya* species
Yellow birch	*Betula alleghaniensis*
Sugar maple	*Acer saccharum*
Soft maples:	
Red maple	*Acer rubrum*
Silver maple	*Acer saccharinum*
American beech	*Fagus grandifolia*
Blackgum	*Nyssa sylvatica*
Sweetgum	*Liquidambar styraciflua*
Ash	*Fraxinus* species
Aspen	*Populus* species
American basswood	*Tilia americana*

Yellow-poplar	*Liriodendron tulipifera*
Black walnut	*Juglans nigra*
Black cherry	*Prunus serotina*
American sycamore	*Platanus occidentalis*
Black locust	*Robinia pseudoacacia*
Other hardwoods:	
Butternut	*Juglans cinerea*
Cucumbertree	*Magnolia acuminata*
Elm	*Ulmus* species
Flowering dogwood	*Cornus florida*
Paper birch	*Betula papyrifera*
Sweet birch	*Betula lenta*
Willow	*Salix* species
Yellow buckeye	*Aesculus octandra*

STATISTICAL DATA

Tables of statistical data for forest area, timber volume, annual growth, and cut for the entire State (National Standard Tables) and associated sampling errors for subtotals and totals appear first (tables 1 to 35).

These are followed by a series of tables that give statistics for each of the six geographic units (tables 36 to 83). The North-Central unit referred to in the text was further divided into northern and southern groups of counties to provide more homogeneous forest conditions throughout each group. The northern group of counties makes up the new Allegheny unit, and the southern group makes up the revised North-Central unit. The Northeastern



The North-Central unit was further divided into units A (Allegheny) and B (North-Central) and the Northeastern unit was further divided into units A (Northeastern) and B (Poconos).

unit was also divided for the same reason—the northern counties make up the revised Northern unit and the southern counties the Pocono unit.

After the geographic-unit tables are the county statistics (tables 84 to 93). These county estimates have been prepared for users who want statistics for a county or group of counties. Estimated sampling errors for county totals only are shown. The users of these data are urged to evaluate the sampling error for each total in relation to their planning needs, use of the data, and decisions based upon these data.

County statistics were computed from means and variances of seven volume strata (stratified from aerial photographs) for each of the geographic units. These were applied to the volume strata within the county, assuming homogeneous forest conditions throughout each stratum. If homogeneity does not exist, the actual errors of some county estimates may be greater than the calculated sampling errors.

Statistical Tables for the State

Statistical Tables for Geographic Units

Statistical Tables for the Counties

Table 1. — Land area of Pennsylvania, by land classes, 1965

Land class	Area	
	Acres	*Percent*
Commercial forest land	16,718,000	58.0
Unproductive forest land	160,000	.6
Productive-reserved forest land	194,000	.7
Total forest land	17,072,000	59.3
Nonforest land[1]	11,732,000	40.7
All land[2]	28,804,000	100.0

Note: Sampling errors for major breakdowns of area are given in table 10.

[1] Includes 114,000 acres of water according to Survey standards of area classification but defined by the Bureau of the Census as land.

[2] Land area from the 1964 Census of Agriculture.

Table 2. — Area of commercial forest land in Pennsylvania, by ownership classes, 1965

Ownership class	Area	
	Acres	*Percent*
National Forest	466,000	2.8
Other Federal	30,000	.2
State Forests	1,695,000	10.1
Other State	951,000	5.7
County and municipal	242,000	1.4
Forest industry:		
Pulp and paper	213,900	1.3
Lumber	224,900	1.3
Other	171,000	1.0
Total forest industry	609,800	3.6
Farmer-owned	3,645,000	21.8
Miscellaneous private	9,079,200	54.4
All ownerships	16,718,000	100.0

Table 3. — Area of commercial forest land in Pennsylvania, by stand-size and ownership classes, 1965
(In thousands of acres)

Stand-size class	All ownerships	National Forest	Other public	Forest industry	Farmer and misc. private
Sawtimber stands	7,332	253	1,235	241	5,603
Poletimber stands	5,817	200	1,326	238	4,053
Sapling-seedling stands	3,251	7	334	131	2,779
Nonstocked areas	318	6	23	0	289
All classes	16,718	466	2,918	610	12,724

Table 4. — Area of commercial forest land in Pennsylvania, by stand-volume classes for sawtimber and other stand-size classes, 1965
(In thousands of acres)

Stand volumes per acre (board feet)[1]	Area by stand-size classes		
	All stands	Sawtimber stands	Other stands
Less than 1,500	10,835	1,872	8,963
1,500 to 5,000	4,841	4,418	423
More than 5,000	1,042	1,042	0
All classes	16,718	7,332	9,386

[1] Net volume, International ¼-inch rule.

Table 5. — Area of commercial forest land in Pennsylvania, by stocking classes based on alternative stand components, 1965

(In thousands of acres)

Stocking class (percent)	Stocking classified in terms of—		
	All trees	Growing-stock trees	Desirable trees
90 to 100	8,850	1,417	125
80 to 90	3,828	3,117	45
70 to 80	1,951	4,193	64
60 to 70	696	2,322	52
50 to 60	546	2,129	307
40 to 50	329	1,584	193
30 to 40	242	854	781
20 to 30	122	584	1,571
10 to 20	121	200	3,416
Less than 10	33	318	10,164
All areas	16,718	16,718	16,718

Table 6. — Area of commercial forest land in Pennsylvania, by stocking classes of growing-stock trees and stand-size classes, 1965

(In thousands of acres)

Stocking class (percent)	All stands	Sawtimber stands	Poletimber stands	Sapling-seedling stands	Non-stocked stands
70 or more	8,727	4,671	2,914	1,142	0
40 to 70	6,035	2,244	2,459	1,332	0
10 to 40	1,638	417	444	777	0
Less than 10	318	0	0	0	318
All classes	16,718	7,332	5,817	3,251	318

Table 7. — Area of commercial forest land in Pennsylvania, by area-condition and ownership classes, 1965
(In thousands of acres)

Area-condition class[1]	All ownerships	National Forest	Other public	Forest industry	Farmer and misc. private
Desirable	234	186	—	—	48
Moderate and favorable	—	—	—	—	—
Moderate and unfavorable	552	228	51	10	263
Poor but favorable	234	6	40	—	188
Poor but unfavorable	15,698	46	2,827	600	12,225
All classes	16,718	466	2,918	610	12,724

[1] For complete definitions of area-condition classes see Appendix.

Table 8. — Area of commercial forest land in Pennsylvania, by growth-per-acre and ownership classes, 1965
(In thousands of acres)

Growth-per-acre class (cubic feet)	All ownerships	National Forest	Other public	Forest industry	Farmer and misc. private
120 or more	371	26	142	38	165
85 to 120	1,165	22	196	85	862
50 to 85	3,872	105	638	161	2,968
Less than 50	11,310	313	1,942	326	8,729
All classes	16,718	466	2,918	610	12,724

Table 9. — Area of commercial forest land in Pennsylvania, by forest types, 1965
(In thousands of acres)

BY OWNERSHIP CLASSES

Forest type	All ownerships	Public ownerships	Private ownerships
White pine	930	66	864
Spruce	19	7	12
Virginia-pitch pine	208	12	196
Oak-pine	135	31	104
Oak-hickory	7,671	1,720	5,951
Oak-gum	200	21	179
Elm-ash-red maple	2,072	206	1,866
Maple-beech-birch	3,545	1,151	2,394
Aspen-birch	1,938	170	1,768
All types	16,718	3,384	13,334

BY STAND-SIZE CLASSES

Forest type	All stands	Saw-timber stands	Pole-timber stands	Sapling-seedling stands	Non-stocked stands
White pine[1]	949	653	222	74	—
Virginia-pitch pine	208	19	117	72	—
Oak-pine	135	70	32	33	—
Oak-hickory	7,671	3,688	2,929	957	97
Oak-gum	200	30	31	116	23
Elm-ash-red maple	2,072	1,020	763	268	21
Maple-beech-birch	3,545	1,743	1,356	357	89
Aspen-birch	1,938	109	367	1,204	258
All types	16,718	7,332	5,817	3,081	488

[1] Includes 19,000 acres of the spruce forest type.

Table 10. — Sampling errors for major area breakdowns in Pennsylvania, 1965

Table No.	Area breakdown classifications	Sampling error
		Percent
1	Commercial forest land	1.4
2	Ownership:	
	Public[1]	—
	Forest industry[1]	—
	Farmer-owned	6
	Miscellaneous private	3
	Farmer and misc. private	3
3	Stand-size class:	
	Sawtimber	3
	Poletimber	4
	Sapling-seedling	7
	Nonstocked	28
4	Stand volumes per acre (board feet):	
	Less than 1,500	2
	1,500 to 5,000	4
	More than 5,000	10
5	Stocking class (percent):	
	70 or more	4
	40 to 70	3
	10 to 40	8
	Less than 10	23
7	Area-condition class:	
	Desirable	11
	Moderate, favorable	—
	Moderate, unfavorable	16
	Poor, favorable	30
	Poor, unfavorable	2
8	Growth-per-acre class (cubic feet):	
	120 or more	36
	85 to 120	18
	50 to 85	9
	Less than 50	6
9	Forest type:	
	White pine	12
	Spruce	70
	Virginia-pitch pine	35
	Oak-pine	21
	Oak-hickory	3
	Oak-gum	38
	Elm-ash-red maple	7
	Maple-beech-birch	5
	Aspen-birch	11

[1] Acreages in public and forest-industry holdings were obtained from ownership records and therefore have no sampling errors.

Table 11. — Area of noncommercial forest land in Pennsylvania, by forest types, 1965
(In thousands of acres)

Forest type	All areas	Productive-reserved areas	Unproductive areas
White pine	3	3	—
Oak-hickory	340	180	160
Maple-beech-birch	11	11	—
All types	354	194	160

Table 12. — Number of growing-stock trees on commercial forest land in Pennsylvania, by diameter classes and by softwoods and hardwoods, 1965
(In thousands of trees)

D.b.h. class (inches)	All species	Softwoods	Hardwoods
1.0- 2.9	3,463,332	357,193	3,106,139
3.0- 4.9	1,909,175	193,076	1,716,099
5.0- 6.9	1,043,999	101,087	942,912
7.0- 8.9	561,817	51,191	510,626
9.0-10.9	279,974	25,814	254,160
11.0-12.9	138,606	12,781	125,825
13.0-14.9	68,440	6,221	62,219
15.0-16.9	34,593	3,110	31,483
17.0-18.9	17,614	1,637	15,977
19.0-28.9	15,762	1,473	14,289
29.0 and larger	19	2	17
All classes	7,533,331	753,585	6,779,746

Table 13. — Number of cull and growing-stock trees on commercial forest land in Pennsylvania, by diameter groups and by softwoods and hardwoods, 1965

(In thousands of trees)

D.b.h. class (inches)	All trees[1]	Cull trees	Growing-stock trees
Softwoods:			
5.0 to 8.9	166,958	14,680	152,278
9.0 to 18.9	60,639	11,076	49,563
19.0 and larger	1,904	429	1,475
Total	229,501	26,185	203,316
Hardwoods:			
5.0 to 10.9	1,984,410	276,712	1,707,698
11.0 to 18.9	293,480	57,976	235,504
19.0 and larger	18,577	4,271	14,306
Total	2,296,467	338,959	1,957,508
All species	2,525,968	365,144	2,160,824

[1] Number of salvable dead trees is negligible in Pennsylvania; therefore this item is omitted from this table.

Table 14. — Volume of timber on commercial forest land in Pennsylvania, by class of timber and by softwoods and hardwoods, 1965

(In millions of cubic feet)

Class of timber	All species	Softwoods	Hardwoods
Sawtimber trees:			
Sawlog portion	6,675	757	5,918
Upper-stem portion	1,397	97	1,300
Total	8,072	854	7,218
Poletimber trees	9,788	623	9,165
All growing-stock trees	17,860	1,477	16,383
Sound cull trees:			
Sawtimber size	921	125	796
Poletimber size	637	35	602
Total	1,558	160	1,398
Rotten cull trees:			
Sawtimber size	399	16	383
Poletimber size	186	3	183
Total	585	19	566
Total, all timber	20,003	1,656	18,347

Table 15. — Net volume of growing stock and sawtimber on commercial forest land in Pennsylvania, by ownership classes, and softwoods and hardwoods, 1965

Ownership class	Growing stock (million cubic feet)			Sawtimber (million board feet)[1]		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
National Forest	667	46	621	1,090	127	963
Other public	3,340	177	3,163	4,910	488	4,422
Forest industry	775	59	716	1,094	127	967
Farmer and misc. private	13,078	1,195	11,883	19,175	2,526	16,649
All ownerships	17,860	1,477	16,383	26,269	3,268	23,001

[1] International ¼-inch rule.

Table 16. — Volume of growing stock and sawtimber on commercial forest land in Pennsylvania, by stand-size classes and by softwoods and hardwoods, 1965

Stand-size class	Growing stock, (million cubic feet)			Sawtimber (million board feet)[1]		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
Sawtimber stands	11,421	1,064	10,357	22,150	2,629	19,521
Poletimber stands	5,930	367	5,563	3,588	572	3,016
Sapling-seedling stands	499	45	454	515	67	448
Nonstocked areas	10	1	9	16	—	16
Total	17,860	1,477	16,383	26,269	3,268	23,001

[1] International ¼-inch rule.

Table 17. — Volume of growing stock on commercial forest land in Pennsylvania, by species and diameter classes, 1965

(In millions of cubic feet)

Species	Diameter class (inches at breast height)										
	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0-38.9	39.0 and larger
Virginia pine	47	17	12	10	5	3	—	—	—	—	—
Other yellow pines	121	11	34	23	29	14	6	4	—	—	—
White pine	543	78	131	70	50	57	55	26	71	4	1
Hemlock	733	162	152	125	96	72	46	34	46	—	—
Other softwoods[1]	33	11	15	2	2	2	1	—	—	—	—
Total softwoods	1,477	279	344	230	182	148	108	64	117	4	1
Select white oaks	1,455	219	278	262	203	144	120	63	145	18	3
Select red oaks	2,328	229	364	389	353	280	222	180	285	23	3
Other red oaks	1,203	111	178	200	183	174	121	76	148	12	—
Chestnut oak[2]	1,901	357	421	396	259	195	123	77	69	3	1
Hickory	470	70	80	102	86	51	35	18	25	3	—
Yellow birch	185	47	55	34	25	17	5	1	1	—	—
Sugar maple	1,239	247	310	264	153	97	63	33	63	9	—
Soft maple	2,611	640	631	577	346	184	107	54	69	1	2
Beech	651	113	110	131	92	76	56	29	44	—	—
Blackgum[3]	78	19	11	18	12	6	6	4	2	—	—
Ash	587	81	101	127	105	80	38	27	27	1	—
Aspen	483	124	170	122	46	17	3	1	—	—	—
Basswood	266	25	58	69	49	30	18	8	9	—	—
Yellow-poplar	501	22	43	51	75	107	70	54	68	11	—
Black walnut	36	5	7	5	3	7	2	4	3	—	—
Black cherry	1,453	138	237	301	265	205	134	83	86	4	—

Sycamore	34	1	1	3	4	4	4	—	14	3	—
Black locust	87	19	22	23	11	6	2	3	1	—	—
Other hardwoods	815	192	191	164	93	64	51	28	26	6	—
Total hardwoods	16,383	2,659	3,268	3,238	2,363	1,744	1,180	743	1,085	94	9
All species	17,860	2,938	3,612	3,468	2,545	1,892	1,288	807	1,202	98	10

[1] Includes 10,300,000 cubic feet of spruce.
[2] Includes 11,300,000 cubic feet of other white oaks.
[3] Includes 2,300,000 cubic feet of sweetgum.

Table 18. — Volume of sawtimber on commercial forest land in Pennsylvania, by species and diameter classes, 1965
(In millions of board feet)[1]

Species	Diameter class (inches at breast height)								
	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0-38.9	39.0 and larger
Virginia pine	54	30	15	9	—	—	—	—	—
Other yellow pines	281	71	108	59	25	18	—	—	—
White pine	1,343	222	173	233	239	109	339	22	6
Hemlock	1,566	421	344	288	189	131	192	1	—
Other softwoods[2]	24	8	9	4	3	—	—	—	—
Total softwoods	3,268	752	649	593	456	258	531	23	6

Continued

Table 18.—Continued

Species	Diameter class (inches at breast height)								
	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0-38.9	39.0 and larger
Select white oaks	2,219	—	619	454	377	207	481	69	12
Select red oaks	4,414	—	1,053	912	728	613	1,008	90	10
Other red oaks	2,235	—	543	540	387	242	482	41	—
Chestnut oak[3]	2,218	—	735	598	397	252	219	14	3
Hickory	652	—	243	150	113	56	80	10	—
Yellow birch	154	—	76	59	15	1	3	—	—
Sugar maple	1,352	—	450	321	203	114	230	34	—
Soft maples	2,464	—	1,060	608	348	193	243	6	6
Beech	963	—	270	248	185	101	159	—	—
Blackgum[4]	88	—	34	15	20	9	10	—	—
Ash	885	—	308	254	130	101	90	2	—
Aspen	223	—	157	55	7	4	—	—	—
Basswood	388	—	155	103	55	32	43	—	—
Yellow-poplar	1,197	—	216	337	215	176	228	25	—
Black walnut	55	—	10	20	4	12	9	—	—
Black cherry	2,511	—	792	663	458	276	310	12	—
Sycamore	99	—	11	10	15	—	48	15	—
Black locust	72	—	30	19	9	11	3	—	—
Other hardwoods	812	—	266	192	155	89	89	21	—
Total hardwoods	23,001	—	7,028	5,558	3,821	2,489	3,735	339	31
All species	26,269	752	7,677	6,151	4,277	2,747	4,266	362	37

[1] International ¼-inch rule.
[2] Includes 9,000,000 board feet of spruce.
[3] Includes 20,400,000 board feet of other white oaks.
[4] Includes 2,200,000 board feet of sweetgum.

Table 19. — Volume of sawtimber on commercial forest land in Pennsylvania, by species and quality classes, 1965
(In millions of board feet)[1]

Species	All classes	Standard-lumber logs			
		Grade 1	Grade 2	Grade 3	Grade 4[2]
Softwoods:					
Virginia pine	54	1	5	29	19
Other yellow pines	281	6	29	128	118
White pine	1,343	75	172	583	513
Hemlock	1,566	1,566	—	—	—
Other softwoods	24	24	—	—	—
Total	3,268	1,672	206	740	650
Hardwoods:					
Select white oaks	2,219	266	497	982	474
Select red oaks	4,414	568	1,007	1,943	896
Other red oaks	2,235	158	395	970	712
Chestnut oak	2,218	128	372	1,068	650
Hickory	652	28	85	322	217
Yellow birch	154	3	22	114	15
Sugar maple	1,352	120	239	666	327
Soft maples	2,464	77	405	1,372	610
Beech	963	45	119	529	270
Blackgum	88	3	12	60	13
Ash	885	70	213	446	156
Aspen	223	9	28	152	34
Basswood	388	21	74	240	53
Yellow-poplar	1,197	190	249	494	264
Black walnut	55	1	9	34	11
Black cherry	2,511	256	499	1,306	450
Sycamore	99	4	14	66	15
Black locust	72	4	10	46	12
Other hardwoods	812	37	122	509	144
Total hardwoods	23,001	1,988	4,371	11,319	5,323
Hardwood quality (in percent)	100	9	19	49	23

[1] International ¼-inch rule.
[2] Grade 4 applies only to the softwoods. For hardwoods the volumes in this column are for tie-and-timber logs.

Table 20. — Sampling errors, in percent, for major timber volume breakdowns in Pennsylvania, 1965

Table No.	Volume breakdown classification	Sampling error
		Percent
14.	Class of timber (cubic feet):	
	Softwood growing stock	9.3
	Hardwood growing stock	1.4
	Sawtimber trees	2.1
	Poletimber trees	1.8
	All growing stock	1.3
	Sound cull trees	3.9
	Rotten cull trees	3.8
	All live trees	1.2
15.	Ownership:	
	Growing Stock (cubic feet)	
	National Forest	1
	Other public	5
	Forest industry	13
	Farmer and other	2
	Sawtimber (board feet)	
	National Forest	2
	Other public	6
	Forest industry	16
	Farmer and other	3
	Softwood total	8
	Hardwood total	2
	All species	2
16.	Stand size:	
	Growing stock (cubic feet)	
	Sawtimber stands	2
	Poletimber stands	4
	Sapling-seedling stands	11
	Nonstocked areas	43
	Sawtimber (board feet)	
	Sawtimber stands	2
	Poletimber stands	6
	Sapling-seedling stands	16
	Nonstocked areas	60

Table No.	Volume breakdown classification	Sampling error: Cubic feet	Sampling error: Board feet
		Percent	
17-18.	Species:		
	Virginia pine	26	24
	Other yellow pines	18	16
	White pine	21	16
	Hemlock	9	10
	Other softwoods	34	38
	Select white oaks	6	7
	Select red oaks	4	4
	Other red oaks	6	8
	Chestnut oak	5	7
	Hickory	8	11
	Yellow birch	10	16
	Sugar maple	7	10
	Soft maples	4	7
	Beech	8	11
	Blackgum	13	20
	Ash	8	11
	Aspen	10	22
	Basswood	12	14
	Yellow-poplar	12	14
	Black walnut	26	33
	Black cherry	6	8
	Sycamore	30	33
	Black locust	15	22
	Other hardwoods	6	10
17-18.	Diameter class (inches):		
	5.0- 6.9	3	*
	7.0- 8.9	2	*
	[1]9.0-10.9	2	9
	11.0-12.9	2	3
	13.0-14.9	3	3
	15.0-16.9	4	3
	17.0-18.9	4	4
	19.0-28.9	4	5
	29.0 and larger	13	12

* No volume in this classification.
[1] Board-foot sampling error for this class is for softwoods only.

Table 21. — Average net annual growth and annual cut of growing stock and sawtimber on commercial forest land in Pennsylvania, by species, 1954-64

Species	Growing stock		Sawtimber	
	Net annual growth	Annual timber cut	Net annual growth	Annual timber cut
	Thousand cubic feet		*Thousand board feet*[1]	
Softwoods:				
Yellow pines	5,584	1,958	9,270	6,100
White and red pines	14,799	5,894	37,972	21,209
Hemlock	20,638	12,239	47,611	42,502
Other softwoods	779	909	647	3,189
Total	41,800	21,000	95,500	73,000
Hardwoods:				
Select oak species	122,384	44,951	256,094	123,985
Other oaks	107,630	31,699	160,102	63,450
Hickory	16,469	4,073	21,555	9,700
Yellow birch	4,845	3,071	4,794	4,552
Sugar maple	51,297	8,542	60,309	14,457
Soft maples	102,223	25,549	105,035	33,871
Beech	20,018	10,573	32,140	24,241
Ash, walnut and black cherry	77,841	31,591	154,647	45,743
Yellow-poplar	15,098	4,805	37,003	14,565
Other hardwoods	55,350	18,164	73,381	31,008
Total	573,155	183,018	905,060	365,572
All species	614,955	204,018	1,000,560	438,572

Average net annual growth and annual cut are based on trend levels between 1954 and 1964 as developed from remeasured permanent sample plots.
[1] International ¼-inch rule.

Table 22. — Average net annual growth and annual cut of growing stock on commercial forest land in Pennsylvania, by ownership classes, and softwoods and hardwoods, 1954-64

(In thousands of cubic feet)

Ownership class	Net annual growth			Annual removals		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
National Forest	29,214	1,430	27,784	2,825	17	2,808
Other public	125,499	6,600	118,899	13,491	320	13,171
Forest industry	37,648	1,044	36,604	9,022	2,442	6,580
Farmer and misc. private	422,594	32,726	389,868	178,680	18,221	160,459
All ownerships	614,955	41,800	573,155	204,018	21,000	183,018

Average net annual growth and annual cut are based on trend levels between 1954 and 1964 as developed from remeasured permanent sample plots.

Table 23. — Average net annual growth and annual cut of sawtimber on commercial forest land in Pennsylvania, by ownership classes, and softwoods and hardwoods, 1954-64

(In thousands of board feet)[1]

Ownership class	Net annual growth			Annual removals		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
National Forest	51,311	4,078	47,233	5,873	79	5,794
Other public	184,150	13,276	170,874	31,187	1,615	29,572
Forest industry	84,561	3,085	81,476	25,765	8,628	17,137
Farmer and misc. private	680,538	75,061	605,477	375,747	62,678	313,069
All ownerships	1,000,560	95,500	905,060	438,572	73,000	365,572

Average net annual growth and annual cut are based on trend levels between 1954 and 1964 as developed from remeasured permanent sample plots.

[1] International ¼-inch rule.

Table 24. — Components of average net annual growth of growing stock and sawtimber on commercial forest land in Pennsylvania, by species group, 1954-64

Components	All species	Softwoods	Hardwoods
	GROWING STOCK		
	Thousands of cubic feet		
Growth on initial growing stock[1]	473,202	30,183	443,019
Ingrowth—saplings that became poletimber	208,224	15,317	192,907
Gross growth	681,426	45,500	635,926
Annual mortality	66,471	3,700	62,771
Net annual growth	614,955	41,800	573,155
	SAWTIMBER		
	Thousands of board feet[2]		
Growth on initial sawtimber inventory	364,295	59,411	304,884
Ingrowth—poletimber trees that became sawtimber	688,809	41,115	647,694
Gross growth	1,053,104	100,526	952,578
Annual mortality	52,544	5,026	47,518
Net annual growth	1,000,560	95,500	905,060

[1] Including growth on trees that were cut.
[2] International ¼-inch rule.

Table 25. — Average annual mortality of growing stock and sawtimber on commercial forest land in Pennsylvania, by species, 1954-64

Species	Growing stock	Sawtimber
	Thousand cubic feet	*Thousand board feet*[1]
Softwoods:		
Yellow pines	1,732	2,458
White and red pines	502	796
Hemlock	1,466	1,772
Other softwoods	(2)	(2)
Total	3,700	5,026
Hardwoods:		
Select oak species	8,420	8,698
Other oaks	12,400	12,963
Hickory	970	2,180
Yellow birch	3,004	7
Sugar maple	2,553	2,814
Soft maples	3,757	(2)
Beech	1,524	1,488
Ash, walnut, and cherry	4,311	3,922
Yellow-poplar	1,059	2,128
Other hardwoods	24,773	13,318
Total	62,771	47,518
All species	66,471	52,544

[1] International ¼-inch rule.
[2] Negligible.

Table 26a. — Average annual mortality of growing stock and sawtimber on commercial forest land in Pennsylvania, by ownership classes, and softwoods and hardwoods, 1954-64

Ownership	Growing stock *(thousand cubic feet)*			Sawtimber *(thousand board feet)*[1]		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
National Forest	1,830	33	1,797	907	99	808
Other public	13,306	842	12,464	11,117	1,312	9,805
Forest industry	4,273	279	3,994	3,191	([2])	3,191
Farmer and misc. private	47,062	2,546	44,516	37,329	3,615	33,714
All ownerships	66,471	3,700	62,771	52,544	5,026	47,518

[1] International ¼-inch rule.
[2] Negligible.

Table 26b. — Average annual mortality of growing stock and sawtimber on commercial forest land in Pennsylvania, by causes and by softwoods and hardwoods, 1954-64

Cause of death	Growing stock *(thousand cubic feet)*			Sawtimber *(thousand board feet)*[1]		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
Fire	610	39	571	—	—	—
Insects	2,320	462	1,858	2,379	684	1,695
Diseases	30,918	514	30,404	19,285	1,213	18,072
Other	23,055	2,237	20,818	20,803	2,358	18,445
Unknown	9,568	448	9,120	10,077	771	9,306
All causes	66,471	3,700	62,771	52,544	5,026	47,518

Table 27. — Sampling errors for major breakdowns of average annual growth, cut, and mortality of growing stock and sawtimber in Pennsylvania, 1954-64

Table No.	Breakdown classification	Sampling error
		Percent
21.	Growth in cubic feet:	
	Softwoods	21
	Hardwoods	5
	All species	5
	Cut in cubic feet:	
	Softwoods	34
	Hardwoods	15
	All species	14
	Growth in board feet:	
	Softwoods	23
	Hardwoods	7
	All species	7
	Cut in board feet:	
	Softwoods	37
	Hardwoods	19
	All species	17
22.	Growth in cubic feet:	
	National Forest	4
	Other public	10
	Forest industry	25
	Farmer and misc. private	6
	Cut in cubic feet:	
	National Forest	30
	Other public	36
	Forest industry	45
	Farmer and misc. private	16
23.	Growth in board feet:	
	National Forest	9
	Other public	15
	Forest industry	29
	Farmer and misc. private	8
23.	Cut in board feet:	
	National Forest	46
	Other public	35
	Forest industry	48
	Farmer and misc. private	20

Table No.	Breakdown classification	Cubic feet	Board feet
		Percent	
25.	Mortality by species groups:		
	Softwoods	23	35
	Hardwoods	11	22
	All species	10	20
26.	Mortality by owner:		
	National Forest	17	56
	Other public	23	53
	Forest industry	37	60
	Farmer and misc. private	12	24
27.	Mortality by cause:		
	Fire	60	—
	Insect	33	77
	Disease	15	33
	Other	19	38
	Unknown	19	37

Table 28. — Total output of timber products, by products, by type of material used, and by softwoods and hardwoods, Pennsylvania 1964

Product and species group	Total output in standard units		Output from roundwood		Output from plant by-products (standard units)
	Unit	Number	Standard units	M cubic feet	
Sawlogs:					
Softwood	M board feet[1]	35,937	35,937	5,926	0
Hardwood	M board feet[1]	509,797	509,797	81,896	0
Total	M board feet[1]	545,734	545,734	87,822	0
Veneer logs:					
Softwood	M board feet	0	0	0	0
Hardwood	M board feet	18,079	18,079	2,907	0
Total	M board feet	18,079	18,079	2,907	0
Cooperage logs:					
Softwood	M board feet	0	0	0	0
Hardwood	M board feet	5,050	5,050	812	0
Total	M board feet	5,050	5,050	812	0
Pulpwood:					
Softwood	Standard cords[2]	90,600	89,500	7,160	1,100
Hardwood	Standard cords[2]	515,900	486,000	38,880	29,900
Total	Standard cords[2]	606,500	575,500	46,040	31,000
Piling:					
Softwood	M linear feet	0	0	0	0
Hardwood	M linear feet	0	0	0	0
Total	M linear feet	0	0	0	0
Poles:					
Softwood	M pieces	0	0	0	0
Hardwood	M pieces	0	0	0	0
Total	M pieces	0	0	0	0
Mine timbers (round):					
Softwood	M cubic feet	135	135	135	0
Hardwood	M cubic feet	3,634	3,634	3,634	0
Total	M cubic feet	3,769	3,769	3,769	0
Miscellaneous industrial wood:[3]					
Softwood	M cubic feet	52	0	0	52
Hardwood	M cubic feet	10,575	6,879	6,879	3,696
Total	M cubic feet	10,627	6,879	6,879	3,748

Continued

Table 28.—Continued

Product and species group	Total output in standard units		Output from roundwood		Output from plant by-products (standard units)
	Unit	Number	Standard units	M cubic feet	
Posts (round and split):					
Softwood	M pieces	0	0	0	0
Hardwood	M pieces	228	228	195	0
Total	M pieces	228	228	195	0
Fuelwood:					
Softwood	Standard cords	4,750	0	0	4,750
Hardwood	Standard cords	223,202	140,314	11,225	82,888
Total	Standard cords	227,952	140,314	11,225	87,638
All products:					
Softwood	M cubic feet	13,741	13,221	13,221	520
Hardwood	M cubic feet	159,147	146,428	146,428	12,719
Total	M cubic feet	172,888	159,649	159,649	13,239

[1] International ¼-inch rule.
[2] Rough wood basis (for example, chips converted to equivalent standard cords).
[3] Includes hewn ties, excelsior bolts, shingle bolts, turnery bolts, chemical wood, and the like.
Note: The lumber production total of 545,734,000 board feet is from the Pennsylvania Department of Forests and Waters' 100 percent canvass of the lumber industry.

Table 29. — Total output of roundwood products, by source and by softwoods and hardwoods, Pennsylvania, 1964

(In thousands of cubic feet)

Source	All species	Softwoods	Hardwoods
Growing-stock trees:[1]			
Sawtimber trees	125,993	6,579	119,414
Poletimber trees	27,589	5,151	22,438
Total	153,582	11,730	141,852
Cull trees[1]	1,280	38	1,242
Salvable dead trees[1]	142	0	142
Other sources[2]	4,645	1,453	3,192
All sources	159,649	13,221	146,428

[1] On commercial forest land.
[2] Includes noncommercial forest land, nonforest land such as fence rows, trees less than 5.0 inches in diameter, and tree tops and limbs.

Table 30. — Annual timber cut[1] from growing stock on commercial forest land, by products and logging residues, and by softwoods and hardwoods, Pennsylvania, 1964

(In thousands of cubic feet)

Products and residues	All species	Softwoods	Hardwoods
Roundwood products:			
Sawlogs	85,369	5,852	79,517
Veneer logs and bolts	2,860	0	2,860
Cooperage logs and bolts	799	0	799
Pulpwood	43,283	5,769	37,514
Piling	0	0	0
Poles	0	0	0
Mine timbers	3,615	109	3,506
Misc. industrial wood	6,637	0	6,637
Posts	188	0	188
Fuelwood	10,831	0	10,831
All products	153,582	11,730	141,852
Logging residues	48,618	1,190	47,428
Timber cut	202,200	12,920	189,280

[1] Timber cut based on estimates of timber products output in 1964, by product.

Table 31. — Annual timber cut[1] from live sawtimber on commercial forest land, by products and logging residues, and by softwoods and hardwoods, Pennsylvania, 1964

(In thousands of board feet)[2]

Products and residues	All species	Softwoods	Hardwoods
Roundwood products:			
Sawlogs	390,886	28,340	362,546
Veneer logs and bolts	13,039	0	13,039
Cooperage logs and bolts	3,645	0	3,645
Pulpwood	109,535	2,570	106,965
Piling	0	0	0
Poles	0	0	0
Mine timbers	10,047	49	9,998
Misc. industrial wood	18,926	0	18,926
Posts	209	0	209
Fuelwood	30,885	0	30,885
All products	577,172	30,959	546,213
Logging residues	17,537	559	16,978
Timber cut	594,709	31,518	563,191

[1] Timber cut based on estimates of timber products output in 1964, by product.
[2] International ¼-inch rule.

Table 32. — Volume of unused plant residues, by industrial source and type of residue, and by softwoods and hardwoods, Pennsylvania, 1964

(In thousands of cubic feet)

Species group and character of plant residues	Industrial source			
	Lumber industry	Veneer and plywood industry	Other primary industries	All industries
Softwoods:				
Coarse[1]	1,220	0	0	1,220
Fine[2]	571	0	0	571
Total	1,791	0	0	1,791
Hardwoods:				
Coarse	13,641	0	313	13,954
Fine	6,980	0	200	7,180
Total	20,621	0	513	21,134
All species:				
Coarse	14,861	0	313	15,174
Fine	7,551	0	200	7,751
Total	22,412	0	513	22,925

[1] Unused material suitable for chipping, such as slabs, edgings, and veneer cores.

[2] Unused material not suitable for chipping, such as sawdust and shavings.

Table 33. — Timber growth projections for Pennsylvania, 1965[1]

Species group	1965 (inventory year)	1975	1985	1995
		GROWING STOCK		
		(Thousand cubic feet)		
Softwoods:				
Cut	18,800	18,800	20,800	22,900
Growth	39,700	46,100	57,200	71,000
Inventory	1,477,200	1,710,100	2,031,000	2,456,900
Hardwoods:				
Cut	219,800	358,000	583,200	904,700
Growth	610,000	739,700	856,000	920,200
Inventory	16,382,900	20,291,300	23,622,500	24,937,500
Total:				
Cut	238,600	376,800	604,000	927,600
Growth	649,700	785,800	913,200	991,200
Inventory	17,860,100	22,001,400	25,653,500	27,394,400
		SAWTIMBER		
		(Thousand board feet)[2]		
Softwoods:				
Cut	66,000	61,000	64,000	68,000
Growth	89,000	96,000	111,000	131,000
Inventory	3,268,000	3,559,000	3,969,000	4,519,000
Hardwoods:				
Cut	502,000	826,000	1,266,000	1,811,000
Growth	1,012,000	1,268,000	1,496,000	1,581,000
Inventory	23,000,000	27,668,000	31,123,000	31,124,000
Total:				
Cut	568,000	887,000	1,330,000	1,879,000
Growth	1,101,000	1,364,000	1,607,000	1,712,000
Inventory	26,268,000	31,227,000	35,092,000	35,643,000

[1] Based upon the following assumptions: that timber output for the Nation and Pennsylvania will increase with gains in population, that the per capita consumption will increase slightly, and that forest management practices will continue to expand; that the cut of softwoods for 1964 will remain constant for the next 10 years and then increase each year from 1975 on; that the cut of hardwoods for 1964 will increase each year for the next 30 years.

[2] International ¼-inch rule.

Table 34. — Volume of growing stock on commercial forest land in Pennsylvania, by species and three kinds of ownership, 1965
(In millions of cubic feet)

Species	State Forests[1]	National Forest [2]	Other[3]	Total
Virginia pine	8.5	—	38.6	47.1
Other yellow pines	22.5	—	98.4	120.9
White pine	32.3	10.2	500.4	542.9
Hemlock	52.6	35.7	644.8	733.1
Spruce	—	.3	10.0	10.3
Other softwoods	1.9	—	20.7	22.6
Total softwoods	117.8	46.2	1,312.9	1,476.9
Select white oaks	157.8	31.5	1,266.2	1,455.5
Select red oaks	246.1	61.7	2,019.9	2,327.7
Other red oaks	123.9	3.7	1,075.7	1,203.3
Chestnut oak[4]	294.4	5.9	1,600.8	1,901.1
Hickory	9.4	.6	459.9	469.9
Yellow birch	42.8	17.3	124.9	185.0
Sugar maple	142.5	63.7	1,032.4	1,238.6
Soft maples	235.9	154.3	2,221.3	2,611.5
Beech	54.9	33.8	562.1	650.8
Blackgum[5]	3.0	.2	75.1	78.3
Ash	61.0	24.0	501.7	586.7
Aspen	70.1	13.3	399.3	482.7
Basswood	31.9	12.0	221.9	265.8
Yellow-poplar	8.8	7.1	485.1	501.0
Black walnut	—	—	35.8	35.8
Black cherry	164.9	168.7	1,119.9	1,453.5
Sycamore	—	—	34.4	34.4
Black locust	.2	—	87.3	87.5
Other hardwoods	91.5	22.9	700.2	814.6
Total hardwoods	1,739.1	620.7	14,023.9	16,383.7
All species	1,856.9	666.9	15,336.8	17,860.6

[1] State Forests throughout the State were grouped into three geographic sampling units.
[2] National Forest was a separate geographic sampling unit.
[3] All other land in the State was divided into six geographic sampling units.
[4] Includes 11,300,000 cubic feet of other white oaks.
[5] Includes 2,300,000 cubic feet of sweetgum.

Table 35. — Volume of sawtimber on commercial forest land in Pennsylvania, by speices and three kinds of ownership, 1965
(In millions of board feet)[1]

Species	State Forests	National Forest	Other	Total
Virginia pine	—	—	54.0	54.0
Other yellow pines	75.0	—	206.0	281.0
White pine	128.6	25.5	1,189.3	1,343.4
Hemlock	131.3	101.5	1,332.8	1,565.6
Spruce	—	—	9.0	9.0
Other softwoods	4.7	—	10.3	15.0
Total softwoods	339.6	127.0	2,801.4	3,268.0
Select white oaks	172.0	41.3	2,005.8	2,219.1
Select red oaks	577.1	142.3	3,694.3	4,413.7
Other red oaks	232.6	5.2	1,997.4	2,235.2
Chestnut oak[2]	375.2	8.5	1,834.3	2,218.0
Hickory	18.4	.5	632.6	651.5
Yellow birch	21.6	15.0	117.3	153.9
Sugar maple	97.0	66.2	1,189.2	1,352.4
Soft maples	180.9	178.0	2,104.8	2,463.7
Beech	83.4	64.0	816.0	963.4
Blackgum[3]	3.4	—	84.6	88.0
Ash	138.5	47.5	699.4	885.4
Aspen	38.9	4.8	179.6	223.3
Basswood	67.4	14.8	305.6	387.8
Yellow-poplar	31.5	17.2	1,148.4	1,197.1
Black walnut	—	—	54.9	54.9
Black cherry	448.3	340.3	1,721.9	2,510.5
Sycamore	—	—	99.1	99.1
Black locust	.7	—	71.4	72.1
Other hardwoods	34.9	17.4	759.3	811.6
Total hardwoods	2,521.8	963.0	19,515.9	23,000.7
All species	2,861.4	1,090.0	22,317.3	26,268.7

[1] International ¼-inch rule.
[2] Includes 20,400,000 board feet of other white oaks.
[3] Includes 2,200,000 board feet of sweetgum.

Table 36. — Area by land classes and geographic units in Pennsylvania, 1965

(In thousands of acres)

Land class	Geographic unit[1]								State total
	Western	South-western	Allegheny	North-Central	South-Central	North-eastern	Pocono	South-eastern	
Forest land:									
Commercial	2,528	1,685	3,413	3,196	1,702	1,171	1,938	1,085	16,718
Productive-reserved	22	21	29	34	15	5	42	26	194
Unproductive	7	3	7	107	24	2	10	([2])	160
Total	2,557	1,709	3,449	3,337	1,741	1,178	1,990	1,111	17,072
Nonforest land	3,062	928	549	695	1,213	1,111	764	3,210	[3]11,732
Total area[4]	5,619	2,637	3,998	4,032	2,954	2,289	2,754	4,321	28,804
	Sampling errors, in percent								
Commercial forest	6.5	4.0	2.0	4.0	1.1	4.0	6.0	2.7	1.4

[1] Geographic unit statistics include the Allegheny National Forest and State Forests that are within each unit's boundary.
[2] Negligible.
[3] Includes the 199,680 acres in Delaware and Philadelphia Counties that were not sampled.
[4] Source: 1964 Census of Agriculture.

Table 37. — Area of commercial forest land in Pennsylvania, by ownership classes and geographic units, 1965

(In thousands of acres)

Ownership class	Geographic unit								State total
	Western	South-western	Allegheny	North-Central	South-Central	North-eastern	Pocono	South-eastern	
Public:									
National Forest	0	0	466	0	0	0	0	0	466
State Forests	4	69	629	547	311	10	69	56	1,695
Other public	67	166	247	228	121	102	226	66	1,223
Total	71	235	1,342	775	432	112	295	122	3,384
Private:									
Forest industry	10	25	395	108	28	24	3	17	610
Farmer-owned	893	537	347	355	509	397	248	359	3,645
Miscellaneous private	1,554	888	1,329	1,958	733	638	1,392	587	9,079
Total	2,457	1,450	2,071	2,421	1,270	1,059	1,643	963	13,334
All ownerships	2,528	1,685	3,413	3,196	1,702	1,171	1,938	1,085	16,718
	Sampling errors, in percent[1]								
Farmer-owned	16	14	16	18	8	17	19	14	6
Miscellaneous private	12	9	12	10	7	10	8	9	3

[1] Public and forest-industry acreages were taken from records and therefore had no sampling errors.

Table 38. — Area of commercial forest land in Pennsylvania, by stand-size classes and geographic units, 1965

(In thousands of acres)

Stand-size class	Geographic unit								State total
	Western	South-western	Allegheny	North-Central	South-Central	North-eastern	Pocono	South-eastern	
Sawtimber stands	1,242	860	1,424	1,292	932	431	507	644	7,332
Poletimber stands	437	475	1,449	1,264	614	513	774	291	5,817
Sapling-seedling stands	684	305	486	585	149	169	601	102	3,081
Nonstocked areas	165	45	54	55	7	58	56	48	488
All classes	2,528	1,685	3,413	3,196	1,702	1,171	1,938	1,085	16,718
	Sampling errors, in percent								
Sawtimber stands	12	9	11	12	5	15	13	8	3
Poletimber stands	20	13	12	13	9	13	11	18	4
Sapling-seedling stands	20	23	24	22	19	23	18	33	7
Nonstocked areas	*	48	45	45	**	43	44	49	28

* Sampling error of 50 to 100 percent.
** Sampling error of over 100 percent.

Table 39. — Area of sawtimber stands in Pennsylvania, by stocking-percent classes of growing-stock trees and geographic units, 1965

(In thousands of acres)

Sawtimber stands in geographic unit—	Stocking-percent class			All classes
	70 percent or more	40 to 70 percent	Under 40 percent	
Western	253	724	265	1,242
Southwestern	276	465	119	860
Allegheny	696	658	70	1,424
North-Central	484	663	145	1,292
South-Central	352	482	98	932
Northeastern	93	266	72	431
Pocono	265	195	47	507
Southeastern	214	365	65	644
All sawtimber stands	2,633	3,818	881	7,332

Table 40. — Area of commercial forest land in Pennsylvania, by forest types and geographic units, 1965
(In thousands of acres)

Forest type	Geographic unit								State total
	Western	South-western	Alle-gheny	North-Central	South-Central	North-eastern	Pocono	South-eastern	
White pine	117	39	175	233	33	119	213	1	930
Virginia-pitch pine[1]	19	23	—	74	27	—	71	13	227
Oak-pine	—	11	22	—	59	—	33	10	135
Oak-hickory	704	929	674	1,923	1,372	274	1,046	749	7,671
Oak-gum	55	76	10	36	—	—	10	13	200
Elm-ash-red maple	580	155	460	255	88	196	193	145	2,072
Maple-beech-birch	476	362	1,599	380	116	400	83	129	3,545
Aspen-birch	577	90	473	295	7	182	289	25	1,938
All types	2,528	1,685	3,413	3,196	1,702	1,171	1,938	1,085	16,718
	Sampling errors, in percent								
White pine	37	49	32	29	38	35	29	**	12
Virginia-pitch pine	*	*	—	*	48	—	36	*	35
Oak-pine	—	**	16	—	31	—	*	**	21
Oak-hickory	15	8	9	6	3	11	8	6	3
Oak-gum	*	*	**	*	—	—	**	*	38
Elm-ash-red maple	17	23	13	18	25	21	21	26	7
Maple-beech-birch	18	15	5	15	21	14	29	27	5
Aspen-birch	27	33	20	25	**	32	25	*	11

[1] Includes 19,000 acres of the spruce forest type in the Pocono unit.
* Sampling error of 50 to 100 percent.
** Sampling error of over 100 percent.

Table 41. — Area of commercial forest land in the WESTERN geographic unit, Pennsylvania, by forest types and stand-size classes, 1965

(In thousands of acres)

Forest type[1]	Stand-size class				All classes
	Sawtimber stands	Poletimber stands	Sapling-seedling stands	Nonstocked areas	
White pine[2]	104.5	12.9	18.4	—	135.8
Oak-hickory	479.9	81.0	124.8	18.4	704.1
Oak-gum	18.4	—	36.9	—	55.3
Elm-ash-red maple	355.9	100.1	124.1	—	580.1
Maple-beech-birch	230.4	135.3	91.7	18.4	475.8
Aspen-birch	52.9	107.6	288.4	127.5	576.4
All types	1,242.0	436.9	684.3	164.3	2,527.5

[1] Whenever the acreage for a forest type is less than 1 percent of the unit total, a further breakdown into stand-size classes is not shown.
[2] Includes 18,400 acres of the Virginia-pitch pine forest type.

Table 42. — Area of commercial forest land in the SOUTHWESTERN geographic unit, Pennsylvania, by forest types and stand-size classes, 1965

(In thousands of acres)

Forest type	Stand-size class				All classes
	Sawtimber stands	Poletimber stands	Sapling-seedling stands	Nonstocked areas	
White pine	38.7	0.6	0.1	—	39.4
Virginia-pitch pine	—	11.3	11.3	—	22.6
Oak-hickory	518.0	323.7	75.8	11.3	928.8
Oak-gum[1]	—	11.3	76.4	—	87.7
Elm-ash-red maple	90.6	55.9	8.1	—	154.6
Maple-beech-birch	212.7	72.1	65.4	11.3	361.5
Aspen-birch	—	—	67.7	22.6	90.3
All types	860.0	474.9	304.8	45.2	1,684.9

[1] Includes 11,300 acres of the oak-pine forest type.

Table 43. — Area of commercial forest land in the ALLEGHENY geographic unit, Pennsylvania, by forest types and stand-size classes, 1965

(In thousands of acres)

Forest type	Stand-size class				All classes
	Sawtimber stands	Poletimber stands	Sapling-seedling stands	Nonstocked areas	
White pine	115.2	44.9	14.6	—	174.7
Oak-pine[1]	17.0	12.7	2.7	—	32.4
Oak-hickory	276.9	324.6	69.9	2.6	674.0
Elm-ash-red maple	238.0	188.5	33.2	—	459.7
Maple-beech-birch	756.4	730.5	82.2	29.8	1,598.9
Aspen-birch	20.4	148.0	283.2	21.5	473.1
All types	1,423.9	1,449.2	485.8	53.9	3,412.8

[1] Includes 9,900 acres of the oak-gum forest type.

Table 44. — Area of commercial forest land in the NORTH-CENTRAL geographic unit, Pennsylvania, by forest types and stand-size classes, 1965

(In thousands of acres)

Forest type	Stand-size class				All classes
	Sawtimber stands	Poletimber stands	Sapling-seedling stands	Nonstocked areas	
White pine	154.7	53.7	24.2	—	232.6
Virginia-pitch pine	—	60.6	14.2	—	74.8
Oak-hickory	796.3	878.5	236.7	11.6	1,923.1
Oak-gum	9.5	14.7	11.6	—	35.8
Elm-ash-red maple	133.8	95.6	25.4	—	254.8
Maple-beech-birch	184.5	143.1	33.6	18.8	380.0
Aspen-birch	13.1	18.0	239.5	24.5	295.1
All types	1,291.9	1,264.2	585.2	54.9	3,196.2

Table 45. — Area of commercial forest land in the SOUTH-CENTRAL geographic unit, Pennsylvania, by forest types and stand-size classes, 1965

(In thousands of acres)

Forest type	Stand-size class				All classes
	Sawtimber stands	Poletimber stands	Sapling-seedling stands	Nonstocked areas	
White pine	22.7	2.8	7.5	—	33.0
Virginia-pitch pine	—	19.5	7.2	—	26.7
Oak-pine	20.1	24.1	14.4	—	58.6
Oak-hickory	795.4	490.0	79.5	7.2	1,372.1
Elm-ash-red maple[1]	34.9	33.2	27.4	—	95.5
Maple-beech-birch	59.2	43.9	13.5	—	116.6
All types	932.3	613.5	149.5	7.2	1,702.5

[1] Includes 7,200 acres of the aspen-birch type.

Table 46. — Area of commercial forest land in the NORTHEASTERN geographic unit, Pennsylvania, by forest types and stand-size classes, 1965

(In thousands of acres)

Forest type	Stand-size class				All classes
	Sawtimber stands	Poletimber stands	Sapling-seedling stands	Nonstocked areas	
White pine	76.9	38.4	3.8	—	119.1
Oak-hickory	58.3	154.7	47.7	13.0	273.7
Elm-ash-red maple	51.7	128.3	11.9	4.3	196.2
Maple-beech-birch	238.2	141.7	11.7	8.4	400.0
Aspen-birch	5.8	50.2	93.3	32.3	181.6
All types	430.9	513.3	168.4	58.0	1,170.6

Table 47. — Area of commercial forest land in the POCONO geographic unit, Pennsylvania, by forest types and stand-size classes, 1965

(In thousands of acres)

Forest type	Stand-size class				All classes
	Sawtimber stands	Poletimber stands	Sapling-seedling stands	Nonstocked areas	
White pine	138.4	57.7	16.8	—	212.9
Virginia-pitch pine[1]	7.4	36.4	27.3	—	71.1
Oak-pine[2]	25.6	—	7.4	10.2	43.2
Oak-hickory	223.9	514.6	285.2	22.4	1,046.1
Elm-ash-red maple	51.3	99.7	37.5	4.2	192.7
Maple-beech-birch	51.8	22.5	7.5	1.8	83.6
Aspen-birch	9.3	42.9	219.8	17.1	289.1
All types	507.7	773.8	601.5	55.7	1,938.7

[1] Includes 18,800 acres of the spruce forest type.
[2] Includes 10,200 acres of the oak-gum forest type.

Table 48. — Area of commercial forest land in the SOUTHEASTERN geographic unit, Pennsylvania, by forest types and stand-size classes, 1965

(In thousands of acres)

Forest type	Stand-size class				All classes
	Sawtimber stands	Poletimber stands	Sapling-seedling stands	Nonstocked areas	
Virginia-pitch pine[1]	13.0	0.4	0.2	—	13.6
Oak-hickory	539.6	161.7	37.6	10.0	748.9
Oak-gum[2]	10.0	—	—	12.8	22.8
Elm-ash-red maple	71.0	61.2	—	12.8	145.0
Maple-beech-birch	10.0	67.6	51.2	—	128.8
Aspen-birch	—	—	12.8	12.8	25.6
All types	643.6	290.9	101.8	48.4	1,084.7

[1] Includes 800 acres of the white pine forest type.
[2] Includes 10,000 acres of the oak-pine forest type.

Table 49. -- Volume of timber on commercial forest land in Pennsylvania by class of timber and geographic units, 1965

(In millions of cubic feet)

Class of timber	Geographic unit								State total
	Western	South-western	Alle-gheny	North-Central	South-Central	North-eastern	Pocono	South-eastern	
Sawtimber trees:									
Sawlogs	897	703	1,648	1,078	891	323	488	647	6,675
Upper stems	178	145	356	232	188	68	104	126	1,397
Total	1,075	848	2,004	1,310	1,079	391	592	773	8,072
Poletimber trees	1,064	850	2,749	1,865	938	745	1,086	491	9,788
All growing stock	2,139	1,698	4,753	3,175	2,017	1,136	1.678	1,264	17,860
Rough trees:									
Sawtimber size	158	88	233	156	80	77	56	73	921
Poletimber size	101	52	150	101	58	72	52	51	637
Total	259	140	383	257	138	149	108	124	1,558
Rotten trees:									
Sawtimber size	57	61	92	62	57	28	20	22	399
Poletimber size	22	26	45	31	19	19	13	11	186
Total	79	87	137	93	76	47	33	33	585
Total, all timber	2,477	1,925	5,273	3,525	2,231	1,332	1,819	1,421	20,003
	Sampling errors, in percent								
Sawtimber trees	7	6	4	5	4	9	8	6	2.1
Poletimber trees	11	6	3	4	4	7	6	8	1.8
All growing stock	5	4	3	4	3	6	5	4	1.3
Rough trees	13	10	8	7	8	11	12	11	3.9
Rotten trees	12	10	9	10	9	13	15	15	3.8

Table 50. — Volume of growing stock on commercial forest land in Pennsylvania, by ownership classes, softwoods and hardwoods, and geographic units, 1965
(In millions of cubic feet)

Ownership and species group	Geographic unit								State total
	Western	South-western	Alle-gheny	North-Central	South-Central	North-eastern	Pocono	South-eastern	
State Forests:									
Softwoods	—	5	32	35	33	1	7	5	118
Hardwoods	3	58	813	506	265	10	46	38	1,739
Total	3	63	845	541	298	11	53	43	1,857
Other public[1]:									
Softwoods	1	7	63	17	5	4	6	2	105
Hardwoods	88	181	984	363	144	85	117	84	2,046
Total	89	188	1,047	380	149	89	123	86	2,151
Private:									
Softwoods	162	42	200	272	122	126	289	41	1,254
Hardwoods	1,885	1,405	2,661	1,982	1,448	910	1,213	1,094	12,598
Total	2,047	1,447	2,861	2,254	1,570	1,036	1,502	1,135	13,852
All ownerships:									
Softwoods	163	54	295	324	160	131	302	48	1,477
Hardwoods	1,976	1,644	4,458	2,851	1,857	1,005	1,376	1,216	16,383
Total	2,139	1,698	4,753	3,175	2,017	1,136	1,678	1,264	17,860
	Sampling errors, in percent								
Total line only, for:									
State forests	10	10	4	5	6	30	16	16	3
Other public	41	21	12	16	21	41	24	40	10
Private	6	4	4	5	4	4	5	5	2

[1] Includes 46 and 621 million cubic feet for softwoods and hardwoods respectively on National Forest land in the Allegheny geographic unit.

Table 51. — Volume of sawtimber on commercial forest land in Pennsylvania, by ownership classes, softwoods and hardwoods, and geographic units, 1965
(In millions of board feet)

Ownership and species group	Geographic unit								State total
	Western	Southwestern	Allegheny	North-Central	South-Central	Northeastern	Pocono	Southeastern	
State Forests:									
Softwoods	1	15	64	124	110	2	12	12	340
Hardwoods	4	77	1,114	731	472	14	54	56	2,522
Total	5	92	1,178	855	582	16	66	68	2,862
Other public[1]:									
Softwoods	2	18	166	40	13	7	25	4	275
Hardwoods	183	277	1,401	438	246	76	91	151	2,863
Total	185	295	1,567	478	259	83	116	155	3,138
Private:									
Softwoods	192	59	462	589	275	219	760	97	2,653
Hardwoods	2,996	2,181	3,493	2,581	2,229	1,079	1,251	1,806	17,616
Total	3,188	2,240	3,955	3,170	2,504	1,298	2,011	1,903	20,269
All ownerships:									
Softwoods	195	92	692	753	398	228	797	113	3,268
Hardwoods	3,183	2,535	6,008	3,750	2,947	1,169	1,396	2,013	23,001
Total	3,378	2,627	6,700	4,503	3,345	1,397	2,193	2,126	26,269
	Sampling errors, in percent								
Total line only, for:									
State Forests	28	21	10	13	13	49	28	29	7
Other public	45	25	9	18	24	38	32	41	8
Private	7	7	6	7	6	9	8	8	3

[1] Includes 127 and 963 million board feet for softwoods and hardwoods respectively on National Forest land in the Allegheny geographic unit.

Table 52. — Volume of growing stock on commercial forest land in Pennsylvania, by stand-size classes, softwoods and hardwoods, and geographic units, 1965
(In millions of cubic feet)

Stand-size class and species group	Geographic unit								State total
	Western	South-western	Alle-gheny	North-Central	South-Central	North-eastern	Pocono	South-eastern	
Sawtimber stands:									
Softwoods	153	43	199	218	96	95	217	43	1,064
Hardwoods	1,527	1,195	2,573	1,647	1,375	475	592	973	10,357
Total	1,680	1,238	2,772	1,865	1,471	570	809	1,016	11,421
Poletimber stands:									
Softwoods	7	6	88	97	57	32	75	5	367
Hardwoods	331	396	1,829	1,079	463	512	730	223	5,563
Total	338	402	1,917	1,176	520	544	805	228	5,930
Other stands:									
Softwoods	3	5	8	9	7	4	10	—	46
Hardwoods	118	53	56	125	19	18	54	20	463
Total	121	58	64	134	26	22	64	20	509
All stands:									
Softwoods	163	54	295	324	160	131	302	48	1,477
Hardwoods	1,976	1,644	4,458	2,851	1,857	1,005	1,376	1,216	16,383
Total	2,139	1,698	4,753	3,175	2,017	1,136	1,678	1,264	17,860
	Sampling errors, in percent								
Total line only, for:									
Sawtimber stands	6	6	4	5	4	13	11	6	2
Poletimber stands	20	14	5	8	9	14	11	21	4
Other stands	28	28	27	20	26	36	24	*	11
All stands:									
Softwoods	48	36	7	7	11	48	34	30	9
Hardwoods	6	4	3	4	3	6	5	5	1
Total	5	4	3	4	3	6	5	4	1

* Sampling error is more than 50 percent.

Table 53. — Volume of sawtimber on commercial forest land in Pennsylvania, by stand-size classes, softwoods and hardwoods, and geographic units, 1965
(In millions of board feet)

Stand-size class and species group	Geographic unit								State total
	Western	South-western	Alle-gheny	North-Central	South-Central	North-eastern	Pocono	South-eastern	
Sawtimber stands:									
Softwoods	186	80	557	606	276	183	637	104	2,629
Hardwoods	2,932	2,246	4,793	3,126	2,622	895	1,045	1,862	19,521
Total	3,118	2,326	5,350	3,732	2,898	1,078	1,682	1,966	22,150
Poletimber stands:									
Softwoods	9	6	122	132	113	40	141	9	572
Hardwoods	151	244	1,156	480	301	255	306	123	3,016
Total	160	250	1,278	612	414	295	447	132	3,588
Other stands:									
Softwoods	—	6	13	15	9	5	19	—	67
Hardwoods	100	45	59	144	24	19	45	28	464
Total	100	51	72	159	33	24	64	28	531
All stands:									
Softwoods	195	92	692	753	398	228	797	113	3,268
Hardwoods	3,183	2,535	6,008	3,750	2,947	1,169	1,396	2,013	23,001
Total	3,378	2,627	6,700	4,503	3,345	1,397	2,193	2,126	26,269
	Sampling errors, in percent								
Total line only, for:									
Sawtimber stands	6	6	4	5	4	11	9	7	2
Poletimber stands	27	20	10	12	13	20	18	29	6
Other stands	44	48	45	25	36	48	40	49	15
All stands:									
Softwoods	36	30	12	12	13	30	20	34	8
Hardwoods	6	6	3	4	5	14	11	7	2
Total	6	6	3	4	4	10	7	6	2

Table 54. — Growing-stock volume on state forests and the National forest in Pennsylvania, by species and geographic units, 1965
(In millions of cubic feet)

Species	State Forests in geographic units—								National Forest
	South-western[1]	Alle-gheny	North-Central	South-Central	North-eastern	Pocono	South-eastern	All units	Alle-gheny
Yellow pines[2]	1.8	3.9	10.6	9.1	—	4.1	3.4	32.9	0.3
White pine	1.5	7.7	10.2	10.2	0.3	1.3	1.1	32.3	10.2
Hemlock	1.6	20.1	14.3	13.5	.4	1.7	1.0	52.6	35.7
Total softwoods	4.9	31.7	35.1	32.8	.7	7.1	5.5	117.8	46.2
Select white oaks	9.2	26.0	65.7	38.3	.7	10.0	7.9	157.8	31.5
Select red oaks	9.9	86.9	84.9	51.5	1.2	5.8	5.9	246.1	61.7
Other red oaks	8.7	15.0	63.5	27.6	.2	3.9	5.0	123.9	3.7
Chestnut oak	15.7	35.1	108.2	104.4	.9	14.7	15.4	294.4	5.9
Hickory	.4	.9	3.2	3.7	—	.6	.6	9.4	.6
Yellow birch	1.5	25.8	11.7	3.0	.2	.4	.2	42.8	17.3
Sugar maple	1.3	117.3	20.0	.5	1.7	1.6	.1	142.5	63.7
Soft maples	6.7	150.4	57.0	14.6	2.0	3.8	1.4	235.9	154.3
Beech	.4	43.7	8.6	.3	.9	1.0	—	54.9	33.8
Ash	.5	44.7	12.7	1.1	.9	.9	.2	61.0	24.0
Aspen	.7	56.6	11.4	.7	.4	.3	—	70.1	13.3
Basswood	.8	21.5	8.5	.7	.2	.1	.1	31.9	12.0
Yellow-poplar	.3	1.5	2.5	3.6	—	.3	.6	8.8	7.1
Black cherry	1.7	139.0	22.4	.6	.8	.4	—	164.9	168.7
Other hardwoods[3]	3.5	48.8	25.4	14.2	.4	1.4	1.0	94.7	23.1
Total hardwoods	61.3	813.2	505.7	264.8	10.5	45.2	38.4	1,739.1	620.7
All species	66.2	844.9	540.8	297.6	11.2	52.3	43.9	1,856.9	666.9

[1] Includes 3,100,000 cubic feet in the western geographic unit.
[2] Includes 2,200,000 cubic feet of other softwoods.
[3] Includes 3,200,000 cubic feet of blackgum.

Table 55. — Sawtimber volume on state forests and the National forest in Pennsylvania, by species and geographic units, 1965
(In millions of board feet)

Species	State Forests in geographic units—								National Forest
	Southwestern[1]	Allegheny	North-Central	South-Central	Northeastern	Pocono	Southeastern	All units	Allegheny
Yellow pines[2]	4.6	11.8	36.5	20.8	0.1	2.0	3.9	79.7	—
White pine	7.0	22.5	43.7	44.8	.6	5.2	4.8	128.6	25.5
Hemlock	4.5	30.0	43.1	44.1	.9	5.3	3.4	131.3	101.5
Total softwoods	16.1	64.3	123.3	109.7	1.6	12.5	12.1	339.6	127.0
Select white oaks	8.7	28.0	66.3	55.8	.5	5.9	6.8	172.0	41.3
Select red oaks	22.3	190.6	205.9	132.0	2.3	10.0	14.0	577.1	142.3
Other red oaks	15.5	24.7	106.1	69.7	.3	5.2	11.1	232.6	5.2
Chestnut oak	18.9	25.4	137.9	155.4	1.1	18.7	17.8	375.2	8.5
Hickory	.7	1.8	6.0	8.1	—	.7	1.1	18.4	.5
Yellow birch	1.4	7.4	7.8	4.0	.1	.6	.3	21.6	15.0
Sugar maple	1.4	70.9	19.0	.4	2.7	2.6	—	97.0	66.2
Soft maples	4.2	116.7	39.2	14.9	1.7	3.1	1.1	180.9	178.0
Beech	—	66.9	11.7	.9	1.9	1.9	.1	83.4	64.0
Ash	.7	100.7	31.4	2.2	1.5	1.5	.5	138.5	47.5
Aspen	.1	34.6	3.6	.1	.2	.3	—	38.9	4.8
Basswood	1.3	44.8	17.9	2.3	.4	.4	.3	67.4	14.8
Yellow-poplar	.9	7.0	8.3	12.3	—	.9	2.1	31.5	17.2
Black cherry	2.8	384.1	59.0	.3	1.3	.8	—	448.3	340.3
Other hardwoods[3]	1.6	9.9	11.7	13.5	.1	1.0	1.2	39.0	17.4
Total hardwoods	80.5	1.113.5	731.8	471.9	14.1	53.6	56.4	2,521.8	963.0
All species	96.6	1,117.8	855.1	581.6	15.7	66.1	68.5	2,861.4	1,090.0

[1] Includes 4,600,000 board feet in the western unit.
[2] Includes 4,700,000 board feet of other softwoods.
[3] Includes 3,400,000 board feet of blackgum.

Table 56. — Growing-stock volume on commercial forest land in the WESTERN unit, by species and diameter classes, 1965
(In millions of cubic feet)

Species	All classes	Diameter class (inches at breast height)								
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
White pine[1]	90.5	33.4	40.3	9.6	2.5	0.9	2.6	—	—	1.2
Hemlock	72.2	19.4	13.9	11.2	8.4	7.0	4.5	5.4	2.4	—
Total softwoods	162.7	52.8	54.2	20.8	10.9	7.9	7.1	5.4	2.4	1.2
Select white oaks	140.5	7.5	12.8	19.1	8.4	17.7	20.4	9.6	33.0	12.0
Select red oaks	235.8	17.2	39.7	39.4	28.9	23.6	23.8	21.4	36.0	5.8
Other red oaks	134.1	6.9	8.3	9.6	23.6	10.2	10.3	7.7	49.0	8.5
Chestnut oak	31.2	2.2	3.3	8.4	1.5	.8	3.0	4.6	6.4	1.0
Hickory	112.0	14.0	18.1	22.5	24.1	10.7	11.9	5.6	5.1	—
Yellow birch	34.7	6.5	6.7	3.1	7.7	9.8	.9	—	—	—
Sugar maple	148.3	19.2	28.2	18.4	20.9	17.4	18.0	8.4	17.8	—
Soft maples	275.1	67.3	65.3	54.6	27.9	15.9	15.9	7.6	18.8	1.8
Beech	79.6	14.4	7.7	8.3	13.6	7.6	15.3	2.0	10.7	—
Ash	82.0	16.6	17.5	13.0	15.7	5.5	6.3	.6	6.8	—
Aspen	89.0	29.4	32.9	20.3	3.5	1.2	1.7	—	—	—
Yellow-poplar	90.5	7.2	14.4	8.3	20.2	15.0	11.9	7.8	5.7	—
Black cherry	253.9	29.0	52.0	59.8	33.5	28.7	23.2	15.3	11.7	.7
Black locust	23.4	6.3	4.7	6.6	3.3	.9	.8	.8	—	—
Other hardwoods[2]	246.1	32.5	41.2	36.2	36.5	33.7	28.1	20.8	15.0	2.1
Total hardwoods	1,976.2	276.2	352.8	327.6	269.3	198.7	191.5	112.2	216.0	31.9
All species	2,138.9	329.0	407.0	348.4	280.2	206.6	198.6	117.6	218.4	33.1

[1] Includes 200,000 cubic feet of yellow pines.
[2] Includes 17,300,000 cubic feet of black walnut.

Table 57. — Sawtimber volume on commercial forest land in the WESTERN unit, by species and diameter classes, 1965
(In millions of board feet)

Species	All classes	Diameter class (inches at breast height)						
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
White pine[1]	59.5	31.8	8.9	3.2	9.3	—	—	6.3
Hemlock	135.3	36.1	30.0	24.7	16.6	19.1	8.8	—
Total softwoods	194.8	67.9	38.9	27.9	25.9	19.1	8.8	6.3
Select white oaks	323.6	—	23.3	54.6	59.2	28.6	106.9	51.0
Select red oaks	448.5	—	81.4	75.0	75.6	68.5	123.9	24.1
Other red oaks	349.8	—	66.7	30.0	32.6	25.7	163.9	30.9
Chestnut oak	53.1	—	3.7	2.1	8.7	13.3	20.7	4.6
Hickory	178.2	—	72.4	30.3	40.3	19.2	16.0	—
Yellow birch	58.8	—	22.8	33.5	2.5	—	—	—
Sugar maple	262.4	—	59.4	59.0	54.9	27.4	61.7	—
Soft maples	278.5	—	85.1	51.8	49.0	25.9	60.8	5.9
Beech	154.9	—	38.7	25.2	49.2	5.8	36.0	—
Ash	108.9	—	44.7	18.2	19.1	2.4	24.5	—
Aspen	19.1	—	11.0	3.3	4.8	—	—	—
Yellow-poplar	178.5	—	56.3	44.7	36.2	24.4	16.9	—
Black cherry	336.1	—	88.4	84.9	70.2	48.9	40.4	3.3
Black locust	18.5	—	9.8	2.6	2.9	3.2	—	—
Other hardwoods[2]	414.2	—	105.1	101.2	84.9	64.0	52.1	6.9
Total hardwoods	3,183.1	—	768.8	616.4	590.1	357.3	723.8	126.7
All species	3,377.9	67.9	807.7	644.3	616.0	376.4	732.6	133.0

[1] Includes 400,000 board feet of yellow pines.
[2] Includes 24,400,000 board feet of black walnut.

Table 58. — Growing-stock volume on commercial forest land in the SOUTHWESTERN unit, by species and diameter classes, 1965
(In millions of cubic feet)

Species	All classes	Diameter class (inches at breast height)								
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Yellow pines	13.0	3.2	3.1	3.5	2.0	0.4	0.1	0.7	—	—
White pine	21.4	5.7	6.7	5.1	1.0	1.2	.9	.1	0.7	—
Hemlock	19.9	4.8	4.0	1.5	2.2	1.8	3.4	1.8	.4	—
Total softwoods	54.3	13.7	13.8	10.1	5.2	3.4	4.4	2.6	1.1	—
Select white oaks	100.6	11.6	17.0	14.0	15.2	11.2	13.3	1.8	13.9	2.6
Select red oaks	361.9	36.2	43.3	50.5	48.3	47.3	36.4	26.2	60.7	13.0
Other red oaks	90.4	7.8	8.6	16.6	15.5	17.0	8.3	5.6	10.0	1.0
Chestnut oak	250.4	44.8	42.9	52.7	35.6	28.4	18.2	15.3	12.5	—
Hickory	48.9	9.8	8.9	8.7	5.8	5.9	3.3	4.4	2.1	—
Sugar maple	120.3	23.0	22.1	20.7	16.3	7.2	6.9	3.7	15.0	5.4
Soft maples	181.1	48.2	41.1	38.2	15.1	10.1	10.4	4.1	13.9	—
Beech	27.4	4.3	6.7	4.6	3.1	3.1	2.6	1.2	1.8	—
Ash	33.3	7.5	1.4	5.3	1.7	7.3	4.4	3.8	1.9	—
Yellow-poplar	78.0	3.1	9.1	11.7	16.0	10.9	10.0	4.2	11.9	1.1
Black cherry	205.0	26.5	28.5	49.9	39.6	20.7	18.1	9.5	9.6	2.6
Other hardwoods[1]	146.7	35.4	27.8	34.1	15.6	14.3	5.3	5.1	6.0	3.1
Total hardwoods	1,644.0	258.2	257.4	307.0	227.8	183.4	137.2	84.9	159.3	28.8
All species	1,698.3	271.9	271.2	317.1	233.0	186.8	141.6	87.5	160.4	28.8

[1] Includes 1,800,000 cubic feet of black walnut.

Table 59. — Sawtimber volume on commercial forest land in the SOUTHWESTERN unit, by species and diameter classes, 1965
(In millions of board feet)

Species	All classes	Diameter class (inches at breast height)						
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Yellow pines	22.3	10.9	7.3	1.1	0.3	2.7	—	—
White pine	31.2	15.0	3.4	4.4	3.8	.5	4.1	—
Hemlock	38.9	4.6	7.6	6.2	12.5	6.8	1.2	—
Total softwoods	92.4	30.5	18.3	11.7	16.6	10.0	5.3	—
Select white oaks	184.0	—	45.1	35.2	39.4	7.4	46.5	10.4
Select red oaks	728.5	—	135.6	137.7	113.0	84.4	209.3	48.5
Other red oaks	177.8	—	47.6	51.3	26.9	16.5	32.3	3.2
Chestnut oak	329.7	—	98.6	83.7	58.5	47.1	41.8	—
Hickory	66.1	—	15.5	17.4	11.4	13.7	8.1	—
Sugar maple	170.1	—	46.0	22.1	20.5	11.8	52.4	17.3
Soft maples	178.3	—	43.6	31.8	32.3	14.9	55.7	—
Beech	34.6	—	8.4	9.3	7.3	4.1	5.5	—
Ash	56.7	—	4.5	20.6	13.5	11.4	6.7	—
Yellow-poplar	168.6	—	45.7	33.1	32.2	13.4	40.7	3.5
Black cherry	289.8	—	108.1	59.8	53.3	28.9	33.1	6.6
Other hardwoods[1]	150.6	—	43.6	40.8	16.3	15.0	25.0	9.9
Total hardwoods	2,534.8	—	642.3	542.8	424.6	268.6	557.1	99.4
All species	2,627.2	30.5	660.6	554.5	441.2	278.6	562.4	99.4

[1] Includes 3,400,000 board feet of black walnut.

Table 60. — Growing-stock volume on commercial forest land in the ALLEGHENY unit, by species and diameter classes, 1965
(In millions of cubic feet)

Species	All classes	Diameter class (inches at breast height)								
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Yellow pines	6.6	0.9	2.6	1.2	1.2	0.2	0.3	0.2	—	—
White pine	77.3	7.1	12.8	10.9	7.5	8.4	7.9	5.1	15.6	2.0
Hemlock	210.7	45.4	40.7	32.9	28.9	21.6	14.5	8.2	18.4	.1
Total softwoods	294.6	53.4	56.1	45.0	37.6	30.2	22.7	13.5	34.0	2.1
Select white oaks	243.9	42.9	46.6	44.4	36.3	25.8	19.0	10.0	18.3	.6
Select red oaks	471.4	44.9	67.3	78.1	80.7	57.8	44.2	37.5	60.1	.8
Other red oaks	97.5	11.5	18.0	17.1	16.0	14.0	9.0	5.5	6.4	—
Chestnut oak	110.5	28.2	24.4	18.2	16.7	12.4	5.1	3.3	2.2	—
Yellow birch	91.4	23.9	28.8	21.5	9.3	3.8	3.1	.5	.5	—
Sugar maple	685.8	144.8	187.9	162.6	78.0	49.6	25.3	15.0	22.4	.2
Soft maples	971.8	220.2	235.6	216.9	152.5	77.1	36.9	16.4	15.3	.9
Beech	323.6	59.2	56.8	62.4	36.9	42.0	26.4	15.3	24.6	—
Ash	231.5	21.3	36.9	57.4	46.5	37.5	14.5	10.9	6.5	—
Aspen	168.7	42.8	59.2	43.4	17.8	5.0	.5	—	—	—
Basswood	123.8	10.6	29.2	36.6	22.1	10.9	7.7	2.7	4.0	—
Black cherry	711.1	46.2	99.8	137.5	138.4	117.6	74.1	46.1	51.0	.4
Other hardwoods	227.6	53.1	51.6	51.7	25.7	21.3	13.4	5.8	4.3	.7
Total hardwoods	4,458.6	749.6	942.1	947.8	676.9	474.8	279.2	169.0	215.6	3.6
All species	4,753.2	803.0	998.2	992.8	714.5	505.0	301.9	182.5	249.6	5.7

Table 61. — Sawtimber volume on commercial forest land in the ALLEGHENY unit, by species and diameter classes, 1965
(In millions of board feet)

Species	All classes	Diameter class (inches at breast height)						
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Yellow pines	17.1	5.5	7.1	1.7	1.7	1.1	—	—
White pine	203.4	29.2	22.0	29.2	30.0	19.2	66.6	7.2
Hemlock	471.3	108.1	102.1	87.4	61.9	33.0	78.5	.3
Total softwoods	691.8	142.8	131.2	118.3	93.6	53.3	145.1	7.5
Select white oaks	372.4	—	113.1	81.6	70.2	37.9	67.5	2.1
Select red oaks	979.4	—	250.7	195.8	157.0	141.3	230.6	4.0
Other red oaks	165.0	—	44.8	42.4	33.6	20.6	23.5	.1
Chestnut oak	73.7	—	25.2	22.2	12.9	8.3	5.0	.1
Yellow birch	44.5	—	23.0	10.0	8.6	1.0	1.9	—
Sugar maple	607.2	—	226.2	160.2	81.8	52.6	85.4	1.0
Soft maples	955.8	—	462.1	248.8	126.0	61.9	53.2	3.8
Beech	454.2	—	101.2	128.7	86.4	50.1	87.7	.1
Ash	403.2	—	147.5	127.0	58.7	46.5	23.5	—
Aspen	90.5	—	70.9	17.4	2.2	—	—	—
Basswood	153.2	—	67.4	34.0	23.7	8.8	19.3	—
Black cherry	1,481.2	—	446.7	404.0	277.2	160.6	191.0	1.7
Other hardwoods	227.8	—	71.5	66.8	45.7	24.7	17.0	2.1
Total hardwoods	6,008.1	—	2,050.3	1,538.9	984.0	614.3	805.6	15.0
All species	6,699.9	142.8	2,181.5	1,657.2	1,077.6	667.6	950.7	22.5

Table 62. — Growing-stock volume on commercial forest land in the NORTH-CENTRAL unit, by species and diameter classes, 1965
(In millions of cubic feet)

Species	All classes	Diameter class (inches at breast height)								
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Yellow pines[1]	51.3	8.9	21.9	8.3	7.5	1.9	1.8	1.0	—	—
White pine	87.1	8.1	14.5	12.2	8.4	9.5	8.8	5.8	17.6	2.2
Hemlock	186.3	40.1	36.0	29.1	25.5	19.1	12.8	7.3	16.4	—
Total softwoods	324.7	57.1	72.4	49.6	41.4	30.5	23.4	14.1	34.0	2.2
Select white oaks	414.0	72.8	87.7	82.6	53.0	36.4	32.3	17.1	31.1	1.0
Select red oaks	546.0	52.0	84.7	97.3	86.8	60.0	51.1	43.4	69.7	1.0
Other red oaks	264.6	31.4	56.6	52.6	35.5	31.5	24.4	15.1	17.5	—
Chestnut oak	432.5	110.3	116.4	85.2	44.3	34.8	20.1	12.7	8.6	.1
Hickory	39.9	4.6	7.2	14.6	6.5	3.9	1.5	.1	1.5	—
Sugar maple	76.5	16.2	21.8	18.8	7.8	4.9	2.8	1.7	2.5	—
Soft maples	483.9	109.7	124.2	113.9	69.2	32.5	18.3	8.1	7.6	.4
Beech	62.5	11.4	11.6	12.5	6.6	7.6	5.1	3.0	4.7	—
Ash	48.2	4.4	8.1	12.4	9.3	7.3	3.0	2.3	1.4	—
Aspen	85.0	21.6	31.7	23.0	7.1	1.3	.3	—	—	—
Basswood	42.6	3.6	10.6	13.2	7.1	3.2	2.6	.9	1.4	—
Black cherry	148.3	9.6	21.8	29.9	27.9	23.3	15.5	9.6	10.6	.1
Other hardwoods	206.2	49.5	52.7	47.3	17.9	15.6	13.0	6.1	3.5	.6
Total hardwoods	2,850.2	497.1	635.1	603.3	379.0	262.3	190.0	120.1	160.1	3.2
All species	3,174.9	554.2	707.5	652.9	420.4	292.8	213.4	134.2	194.1	5.4

[1] Includes 11,600,000 cubic feet of other softwoods.

Table 63. — Sawtimber volume on commercial forest land in the NORTH-CENTRAL unit, by species and diameter classes, 1965
(In millions of board feet)

Species	All classes	Diameter class (inches at breast height)						
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Yellow pines[1]	72.6	24.9	29.3	7.0	6.9	4.4	0.1	—
White pine	289.5	41.5	31.3	41.5	42.7	27.4	94.8	10.3
Hemlock	391.1	89.7	84.8	72.5	51.3	27.4	65.2	.2
Total softwoods	753.2	156.1	145.4	121.0	100.9	59.2	160.1	10.5
Select white oaks	546.8	—	166.1	119.7	103.0	55.7	99.2	3.1
Select red oaks	1,052.2	—	269.4	210.3	168.6	151.8	247.8	4.3
Other red oaks	451.6	—	122.6	116.2	91.9	56.5	64.3	.1
Chestnut oak	451.3	—	154.5	136.1	79.0	50.7	30.7	.3
Hickory	38.1	—	16.5	12.9	4.3	.2	4.2	—
Sugar maple	63.4	—	23.6	16.7	8.6	5.5	8.9	.1
Soft maples	444.5	—	214.9	115.7	58.6	28.7	24.8	1.8
Beech	102.6	—	22.9	29.1	19.5	11.3	19.8	—
Ash	61.0	—	22.4	19.2	8.9	7.0	3.5	—
Aspen	22.0	—	17.3	4.2	.5	—	—	—
Basswood	68.7	—	30.1	15.3	10.7	3.9	8.7	—
Black cherry	243.9	—	73.6	66.5	45.6	26.4	31.5	.3
Other hardwoods	203.9	—	64.7	56.9	43.4	23.3	13.6	2.0
Total hardwoods	3,750.0	—	1.198.6	918.8	642.6	421.0	557.0	12.0
All species	4,503.2	156.1	1,344.0	1,039.8	743.5	480.2	717.1	22.5

[1] Includes 3,200,000 board feet of other softwoods.

Table 64. — Growing-stock volume on commercial forest land in the SOUTH-CENTRAL unit, by species and diameter classes, 1965
(In millions of cubic feet)

Species	All classes	Diameter class (inches at breast height)								
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Virginia pine	23.6	5.2	7.4	4.7	3.6	2.7	—	—	—	—
Other yellow pines[1]	30.8	5.6	7.0	6.1	6.5	2.8	2.7	0.1	—	—
White pine	71.9	6.2	8.3	11.8	9.7	7.5	12.1	4.5	11.8	—
Hemlock	33.8	6.8	4.2	6.0	3.6	6.7	3.1	1.7	1.7	—
Total softwoods	160.1	23.8	26.9	28.6	23.4	19.7	17.9	6.3	13.5	—
Select white oaks	234.6	25.5	33.4	42.5	45.2	27.2	22.5	12.7	24.3	1.3
Select red oaks	271.1	21.2	41.7	44.5	46.8	36.5	30.4	19.7	28.0	2.3
Other red oaks	286.5	24.1	37.0	58.5	51.1	49.4	30.8	15.8	19.6	.2
Chestnut oak	552.9	61.3	105.1	109.9	92.3	84.0	52.9	25.0	21.7	.7
Hickory	105.1	14.9	19.1	24.3	15.2	10.6	9.6	5.0	6.4	—
Sugar maple	21.7	6.0	5.5	3.6	3.3	2.1	.5	.2	.5	—
Soft maples	108.9	24.9	22.2	19.6	15.9	14.3	6.5	2.2	2.6	.7
Ash	46.7	6.1	4.0	7.3	8.0	6.6	3.7	4.1	6.9	—
Yellow-poplar	50.4	3.0	5.2	8.0	7.4	8.8	5.8	6.6	5.6	—
Black locust	26.4	3.2	6.7	7.5	3.6	2.9	.9	1.6	—	—
Other hardwoods[2]	152.8	31.6	28.3	31.2	21.5	12.3	9.8	5.1	13.0	—
Total hardwoods	1,857.1	221.8	308.2	356.9	310.3	254.7	173.4	98.0	128.6	5.2
All species	2,017.2	245.6	335.1	385.5	333.7	274.4	191.3	104.3	142.1	5.2

[1] Includes 9,200,000 cubic feet of other softwoods.
[2] Includes 11,100,000 cubic feet of black cherry and 8,400,000 cubic feet of black walnut.

Table 65. — Sawtimber volume on commercial forest land in the SOUTH-CENTRAL unit, by species and diameter classes, 1965
(In millions of board feet)

Species	All classes	Diameter class (inches at breast height)						
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Virginia pine	34.3	14.0	11.4	8.9	—	—	—	—
Other yellow pines[1]	61.1	18.3	21.5	10.3	10.2	0.8	—	—
White pine	216.5	35.5	31.1	26.4	45.6	19.5	58.4	—
Hemlock	86.2	19.9	13.1	27.0	12.4	5.2	8.5	0.1
Total softwoods	398.1	87.7	77.1	72.6	68.2	25.5	66.9	.1
Select white oaks	404.4	—	132.2	81.7	67.8	37.2	81.1	4.4
Select red oaks	524.8	—	135.6	118.0	98.2	68.5	96.8	7.7
Other red oaks	500.8	—	146.1	146.3	93.7	48.8	65.3	.6
Chestnut oak	823.3	—	258.8	248.8	162.3	80.9	68.8	3.7
Hickory	139.3	—	42.1	31.8	28.1	14.8	22.5	—
Sugar maple	19.5	—	9.2	5.8	1.4	1.0	2.1	—
Soft maples	126.2	—	46.3	42.7	18.5	7.0	8.6	3.1
Ash	83.5	—	21.2	17.3	10.9	13.2	20.9	—
Yellow-poplar	114.3	—	23.1	24.7	19.4	25.0	22.1	—
Black locust	27.6	—	10.2	9.6	2.8	5.0	—	—
Other hardwoods[2]	182.8	—	58.7	36.2	29.4	16.6	41.9	—
Total hardwoods	2,946.5	—	883.5	762.9	532.5	318.0	430.1	19.5
All species	3,344.6	87.7	960.6	835.5	600.7	343.5	497.0	19.6

[1] Includes 9,400,000 board feet of other softwoods.
[2] Includes 2,500,000 board feet of black cherry and 12,800,000 board feet of black walnut.

Table 66. — Growing-stock volume on commercial forest land in the NORTHEASTERN unit, by species and diameter classes, 1965
(In millions of cubic feet)

Species	All classes	Diameter class (inches at breast height)								
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Spruce[1]	4.9	1.1	1.2	0.7	0.8	0.8	0.1	0.2	—	—
White pine	32.5	3.2	8.8	3.4	3.3	4.8	3.9	1.0	4.0	0.1
Hemlock	93.5	20.4	23.9	20.6	11.8	6.9	2.7	4.3	2.9	—
Total softwoods	130.9	24.7	33.9	24.7	15.9	12.5	6.7	5.5	6.9	.1
Select white oaks	33.5	7.3	9.1	7.4	4.5	2.5	.8	.7	1.2	—
Select red oaks	112.1	18.6	27.0	22.4	15.5	14.0	5.5	3.8	4.2	1.1
Other red oaks	13.4	2.0	3.9	2.3	2.0	2.1	.7	.1	.3	—
Chestnut oak	66.0	16.6	17.8	16.0	7.6	3.7	2.2	1.5	.6	—
Hickory	19.3	4.9	3.9	4.7	3.0	1.0	.8	.2	.8	—
Yellow birch	16.2	5.9	5.3	1.4	2.2	1.4	—	—	—	—
Sugar maple	149.2	31.0	36.4	31.0	19.9	12.9	8.0	3.1	4.5	2.4
Soft maples	223.4	65.7	57.3	50.7	23.6	12.2	5.6	4.4	3.9	—
Beech	90.7	13.0	17.0	24.6	18.6	8.6	3.4	4.4	1.1	—
Ash	56.2	8.9	13.4	13.1	9.5	4.3	2.7	3.2	.8	.3
Aspen	66.7	12.4	22.4	18.6	8.0	4.9	.4	—	—	—
Basswood	34.1	3.8	5.5	6.1	7.4	6.2	3.1	.7	1.3	—
Black cherry	77.7	12.5	20.4	12.9	16.4	9.0	2.3	1.9	2.3	—
Other hardwoods	47.1	13.3	12.0	7.9	4.7	3.8	2.0	.6	1.2	1.6
Total hardwoods	1,005.6	215.9	251.4	219.1	142.9	86.6	37.5	24.6	22.2	5.4
All species	1,136.5	240.6	285.3	243.8	158.8	99.1	44.2	30.1	29.1	5.5

[1] Includes 400,000 cubic feet of yellow pines.

Table 67. — Sawtimber volume on commercial forest land in NORTHEASTERN unit, by species and diameter classes, 1965
(In millions of board feet)

Species	All classes	Diameter class (inches at breast height)						
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Spruce[1]	5.7	1.3	1.8	1.8	0.3	0.5	—	—
White pine	63.9	8.5	8.9	15.5	13.4	3.4	13.6	0.6
Hemlock	158.9	60.4	37.7	24.5	10.7	14.7	10.9	—
Total softwoods	228.5	70.2	48.4	41.8	24.4	18.6	24.5	.6
Select white oaks	30.5	—	13.5	7.7	2.5	2.7	4.1	—
Select red oaks	193.4	—	63.3	59.7	25.8	18.6	20.6	5.4
Other red oaks	14.1	—	5.1	6.1	1.9	.3	.7	—
Chestnut oak	79.6	—	37.4	19.2	11.6	8.1	3.3	—
Hickory	25.2	—	12.7	4.3	4.0	.8	3.4	—
Yellow birch	13.0	—	7.9	5.1	—	—	—	—
Sugar maple	192.8	—	69.4	48.8	30.4	14.6	18.6	11.0
Soft maples	188.2	—	84.4	46.9	22.0	18.4	16.5	—
Beech	126.3	—	58.7	32.4	12.3	18.3	4.6	—
Ash	73.8	—	29.8	18.2	8.9	13.1	2.3	1.5
Aspen	24.4	—	15.2	8.1	1.1	—	—	—
Basswood	63.5	—	23.4	21.6	9.9	2.3	6.3	—
Black cherry	106.1	—	50.2	30.4	8.3	7.5	9.7	—
Other hardwoods	38.0	—	11.3	9.1	5.7	1.7	3.9	6.3
Total hardwoods	1,168.9	—	482.3	317.6	144.4	106.4	94.0	24.2
All species	1,397.4	70.2	530.7	359.4	168.8	125.0	118.5	24.8

[1] Includes 100,000 board feet of yellow pine.

Table 68. — Growing-stock volume on commercial forest land in the POCONO unit, by species and diameter classes, 1965
(In millions of cubic feet)

Species	All classes	Diameter class (inches at breast height)								
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Yellow pines[1]	51.3	11.9	12.6	7.1	8.5	7.9	1.4	1.9	—	—
White pine	144.5	14.2	38.5	15.3	14.7	21.2	17.4	4.6	17.9	0.7
Hemlock	106.1	23.1	27.2	23.4	13.4	7.8	3.1	4.9	3.2	—
Total softwoods	301.9	49.2	78.3	45.8	36.6	36.9	21.9	11.4	21.1	.7
Select white oaks	198.0	43.5	53.5	43.9	26.7	14.7	4.4	4.5	6.8	—
Select red oaks	168.8	28.1	40.2	33.8	23.7	21.0	8.4	5.8	6.2	1.6
Other red oaks	73.6	11.0	21.9	12.5	10.7	11.7	3.6	.7	1.5	—
Chestnut oak	286.0	71.7	77.3	69.2	33.2	16.0	9.4	6.5	2.7	—
Hickory	37.5	9.5	7.5	9.1	5.9	1.8	1.7	.3	1.7	—
Sugar maple	31.1	6.4	7.4	6.5	4.3	2.7	1.7	.7	.9	.5
Soft maples	285.6	84.0	72.8	64.8	30.7	15.5	7.1	5.7	5.0	—
Beech	46.1	6.6	8.7	12.3	9.4	4.4	1.8	2.3	.6	—
Ash	32.6	5.2	7.8	7.6	5.5	2.5	1.5	1.8	.5	.2
Aspen	55.3	10.2	18.4	15.4	6.8	4.1	.4	—	—	—
Yellow-poplar	32.3	2.1	.6	.1	7.4	16.6	4.6	.1	.8	—
Black cherry	35.9	5.8	9.4	6.0	7.5	4.2	1.1	.9	1.0	—
Other hardwoods	92.6	26.7	25.1	15.9	10.0	5.6	3.7	.9	2.0	2.7
Total hardwoods	1,375.4	310.8	350.6	297.1	181.8	120.8	49.4	30.2	29.7	5.0
All species	1,677.3	360.0	428.9	342.9	218.4	157.7	71.3	41.6	50.8	5.7

[1] Includes 7,000,000 cubic feet of spruce and other softwoods.

Table 69. — Sawtimber volume on commercial forest land in the POCONO unit, by species and diameter classes, 1965
(In millions of board feet)

Species	All classes	Diameter class (inches at breast height)						
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Yellow pines[1]	109.8	25.7	34.2	34.7	6.3	8.9	—	—
White pine	423.8	56.0	59.1	103.6	88.5	22.4	90.2	4.0
Hemlock	262.5	99.7	62.4	40.5	17.6	24.4	17.9	—
Total softwoods	796.1	181.4	155.7	178.8	112.4	55.7	108.1	4.0
Select white oaks	198.5	—	87.7	50.4	16.2	17.8	26.4	—
Select red oaks	197.9	—	64.7	61.1	26.3	19.1	21.1	5.6
Other red oaks	103.1	—	36.8	45.0	13.9	2.2	5.2	—
Chestnut oak	188.4	—	88.4	45.5	27.4	19.3	7.8	—
Hickory	32.9	—	16.4	5.7	5.2	1.0	4.6	—
Sugar maple	31.7	—	11.4	8.0	5.0	2.4	3.1	1.8
Soft maples	211.4	—	94.7	52.7	24.8	20.7	18.5	—
Beech	66.6	—	30.8	17.1	6.5	9.7	2.5	—
Ash	41.5	—	16.7	10.2	5.0	7.4	1.3	.9
Aspen	58.6	—	36.4	19.6	2.6	—	—	—
Yellow-poplar	125.1	—	28.2	73.4	20.0	.7	2.8	—
Black cherry	45.3	—	21.4	13.0	3.5	3.2	4.2	—
Other hardwoods	95.6	—	33.9	19.2	13.1	5.5	11.1	12.8
Total hardwoods	1,396.6	—	567.5	420.9	169.5	109.0	108.6	21.1
All species	2,192.7	181.4	723.2	599.7	281.9	164.7	216.7	25.1

[1] Includes 4,800,000 board feet of spruce and other softwoods.

Table 70. — Growing-stock volume on commercial forest land in the SOUTHEASTERN unit, by species and diameter classes, 1965
(In millions of cubic feet)

Species	All classes	Diameter class (inches at breast height)								
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Yellow pines[1]	19.2	1.9	5.3	3.1	6.7	1.6	0.6	—	—	—
White pine	17.9	.5	.8	1.4	2.5	3.0	1.9	4.9	2.9	—
Hemlock	10.6	1.4	2.7	1.0	1.9	1.7	1.7	.1	.1	—
Total softwoods	47.7	3.8	8.8	5.5	11.1	6.3	4.2	5.0	3.0	—
Select white oaks	90.4	7.5	18.1	7.7	14.6	8.4	7.2	7.1	16.9	2.9
Select red oaks	160.6	10.9	20.0	23.4	21.7	19.8	22.6	22.3	19.9	—
Other red oaks	243.2	16.4	23.2	31.0	28.1	38.5	34.3	25.9	44.0	1.8
Chestnut oak[2]	171.6	21.8	33.2	36.4	27.9	15.0	12.5	8.5	14.2	2.1
Hickory	85.1	9.2	12.1	11.0	21.0	13.8	5.4	3.0	7.3	2.3
Soft maples	81.7	19.7	12.6	18.5	11.2	6.5	6.1	6.0	1.1	—
Blackgum	20.0	1.5	2.6	5.1	6.7	2.1	1.0	.5	.5	—
Ash	56.2	10.9	11.4	11.0	9.1	9.0	2.0	.1	2.7	—
Yellow-poplar	180.1	3.9	6.8	11.8	16.5	38.2	24.6	27.6	40.3	10.4
Other hardwoods[3]	127.7	27.5	29.6	23.4	18.8	11.3	6.1	3.4	7.6	—
Total hardwoods	1,216.6	129.3	169.6	179.3	175.6	162.6	121.8	104.4	154.5	19.5
All species	1,264.3	133.1	178.4	184.8	186.7	168.9	126.0	109.4	157.5	19.5

[1] Includes 200,000 cubic feet of other softwoods.
[2] Includes 8,800,000 cubic feet of other white oaks.
[3] Includes 7,700,000 cubic feet of black walnut.

Table 71. — Sawtimber volume on commercial forest land in the SOUTHEASTERN unit, by species and diameter classes, 1965
(In millions of board feet)

Species	All classes	Diameter class (inches at breast height)						
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0 and larger
Yellow pines[1]	35.7	8.3	19.4	5.5	2.5	—	—	—
White pine	56.0	4.3	8.6	9.5	5.9	16.7	11.0	—
Hemlock	21.4	3.0	6.0	5.6	6.1	.3	.4	—
Total softwoods	113.1	15.6	34.0	20.6	14.5	17.0	11.4	—
Select white oaks	158.9	—	37.6	23.0	19.3	20.2	48.7	10.1
Select red oaks	289.0	—	52.6	54.3	63.5	60.6	57.8	.2
Other red oaks	473.0	—	73.0	104.1	92.5	71.1	126.3	6.0
Chestnut oak[2]	218.9	—	68.6	39.8	37.0	24.2	41.2	8.1
Hickory	139.3	—	53.8	37.1	14.3	7.9	19.6	6.6
Soft maples	80.8	—	28.3	17.0	17.1	15.2	3.2	—
Blackgum	26.6	—	16.5	5.3	2.5	1.0	1.3	—
Ash	56.8	—	20.7	22.9	5.3	.3	7.6	—
Yellow-poplar	443.0	—	40.0	106.0	66.4	79.4	130.3	20.9
Other hardwoods[3]	126.4	—	43.4	30.5	15.7	14.4	22.4	—
Total hardwoods	2,012.7	—	434.5	440.0	333.6	294.3	458.4	51.9
All species	2,125.8	15.6	468.5	460.6	348.1	311.3	469.8	51.9

[1] Includes 700,000 board feet of other softwoods.
[2] Includes 16,700,000 board feet of other white oaks.
[3] Includes 12,600,000 board feet of black walnut.

Table 72. — Sawtimber volume on commercial forest land in the WESTERN unit, by species and quality classes, 1965
(In millions of board feet)

Species	All classes	Standard-lumber logs			
		Grade 1	Grade 2	Grade 3	Other[1]
Softwoods:					
White pine[2]	59.5	1.9	0.9	36.3	20.4
Hemlock	135.3	—	—	—	135.3
Total softwoods	194.8	1.9	.9	36.3	155.7
Hardwoods:					
Select white oaks	323.6	45.4	77.9	129.8	70.5
Select red oaks	448.5	62.8	108.0	180.0	97.7
Other red oaks	349.8	60.4	77.3	111.0	101.1
Chestnut oak[3]	53.1	9.1	11.6	17.1	15.3
Hickory	178.2	2.0	26.2	93.3	56.7
Yellow birch	58.8	.9	7.1	47.2	3.6
Sugar maple	262.4	22.9	49.1	131.4	59.0
Soft maples	278.5	6.1	44.8	163.3	64.3
Beech	154.9	1.1	2.8	102.1	48.9
Ash	108.9	4.2	28.4	55.2	21.1
Basswood	38.8	1.9	5.7	23.2	8.0
Yellow-poplar	178.5	18.2	30.0	75.0	55.3
Black cherry	336.1	16.5	70.9	179.5	69.2
Other hardwoods	413.0	19.0	60.7	248.2	85.1
Total hardwoods	3,183.1	270.5	600.5	1,556.3	755.8
Hardwood quality (in percent)	100	8	19	49	24

[1] For softwoods, only pines were graded into standard-lumber logs, and pine in this column is Grade 4. Other softwoods had only one classification, that of merchantable. For hardwoods, the volumes in this column are for tie-and-timber logs.
[2] Includes 400,000 board feet of yellow pines.
[3] Includes a small volume of other white oaks.

Table 73. — Sawtimber volume on commercial forest land in the SOUTHWESTERN unit, by species and quality classes, 1965
(In millions of board feet)

Species	All classes	Standard-lumber logs			
		Grade 1	Grade 2	Grade 3	Other[1]
Softwoods:					
Yellow pines	22.0	0.3	0.7	10.5	10.5
White pine	31.2	1.6	2.4	10.9	16.3
Hemlock[2]	39.2	—	—	—	39.2
Total softwoods	92.4	1.9	3.1	21.4	66.0
Hardwoods:					
Select white oaks	184.0	21.3	45.5	72.8	44.4
Select red oaks	728.5	85.1	181.2	286.9	175.3
Other red oaks	177.8	9.2	32.0	85.2	51.4
Chestnut oak[3]	329.7	17.3	61.4	159.2	91.8
Hickory	66.1	5.0	8.9	31.4	20.8
Sugar maple	170.1	18.7	26.6	87.6	37.2
Soft maples	178.3	14.4	31.9	96.8	35.2
Beech	34.6	1.4	4.6	14.5	14.1
Ash	56.7	4.9	16.8	26.1	8.9
Yellow-poplar	168.6	23.8	35.1	59.8	49.9
Black cherry	289.8	9.2	42.0	172.0	66.6
Other hardwoods	150.6	13.2	24.9	91.2	21.3
Total hardwoods	2,534.8	223.5	510.9	1,183.5	616.9
Hardwood quality (in percent)	100	9	20	47	24

[1] See footnote of table 72.
[2] Includes a small amount of other softwoods.
[3] Includes a small amount of other white oaks.

Table 74. — Sawtimber volume on commercial forest land in the ALLEGHENY unit, by species and quality classes, 1965
(In millions of board feet)

Species	All classes	Standard-lumber logs			
		Grade 1	Grade 2	Grade 3	Other[1]
Softwoods:					
Yellow pines	17.1	0.7	3.5	5.4	7.5
White pine	203.4	17.2	26.8	83.1	76.3
Hemlock	471.3	—	—	—	471.3
Total softwoods	691.8	17.9	30.3	88.5	555.1
Hardwoods:					
Select white oaks	372.4	56.0	86.1	160.9	69.4
Select red oaks	979.4	155.2	227.4	428.9	167.9
Other red oaks	165.0	9.4	27.8	75.2	52.6
Chestnut oak[2]	73.7	4.9	13.3	35.1	20.4
Yellow birch	44.5	1.1	6.1	32.6	4.7
Sugar maple	607.2	53.2	103.5	303.6	146.9
Soft maples	955.8	30.9	165.1	505.1	254.7
Beech	454.2	31.1	69.3	244.7	109.1
Ash	403.2	42.0	92.9	201.9	66.4
Aspen	90.5	2.7	11.2	64.6	12.0
Basswood	153.2	8.2	35.3	91.8	17.9
Yellow-poplar	82.2	22.1	19.9	30.2	10.0
Black cherry	1,481.2	192.9	307.6	746.0	234.7
Other hardwoods	145.6	5.9	25.0	83.5	31.2
Total hardwoods	6,008.1	615.6	1,190.5	3,004.1	1,197.9
Hardwood quality (in percent)	100	10	20	50	20

[1] See footnote of table 72.
[2] Includes a small volume of other white oaks.

Table 75. — Sawtimber volume on commercial forest land in the NORTH-CENTRAL unit, by species and quality classes, 1965
(In millions of board feet)

Species	All classes	Standard-lumber logs			
		Grade 1	Grade 2	Grade 3	Other[1]
Softwoods:					
Yellow pines	69.4	2.9	14.1	21.7	30.7
White pine	289.5	24.5	38.2	118.2	108.6
Hemlock[2]	394.3	—	—	—	394.3
Total softwoods	753.2	27.4	52.3	139.9	533.6
Hardwoods:					
Select white oaks	546.8	82.1	126.4	236.3	102.0
Select red oaks	1,052.2	166.8	244.4	460.7	180.3
Other red oaks	451.6	25.6	76.1	205.9	144.0
Chestnut oak	451.3	29.9	81.6	215.1	124.7
Hickory	38.1	1.6	4.8	18.4	13.3
Sugar maple	63.4	5.5	10.8	31.7	15.4
Soft maples	444.5	14.3	76.8	235.0	118.4
Beech	102.6	7.0	15.6	55.4	24.6
Ash	61.0	6.3	14.0	30.7	10.0
Basswood	68.7	3.7	15.9	41.1	8.0
Yellow-poplar	76.8	20.7	18.6	28.1	9.4
Black cherry	243.9	31.8	50.6	122.9	38.6
Other hardwoods	149.1	5.5	25.2	94.6	23.8
Total hardwoods	3,750.0	400.8	760.8	1,775.9	812.5
Hardwood quality (in percent)	100	11	20	47	22

[1] See footnote of table 72.
[2] Includes 3,200,000 board feet of other softwoods.

Table 76. — Sawtimber volume on commercial forest land in the SOUTH-CENTRAL unit, by species and quality classes, 1965
(In millions of board feet)

Species	All classes	Standard-lumber logs			
		Grade 1	Grade 2	Grade 3	Other[1]
Softwoods:					
Yellow pines	86.0	1.4	6.9	51.1	26.6
White pine	216.5	17.4	29.3	82.3	87.5
Hemlock[2]	95.6	—	—	—	95.6
Total softwoods	398.1	18.8	36.2	133.4	209.7
Hardwoods:					
Select white oaks	404.4	35.2	86.4	189.7	93.1
Select red oaks	524.8	52.0	113.1	250.1	109.6
Other red oaks	500.8	27.0	71.9	248.1	153.8
Chestnut oak	823.3	49.3	125.4	416.6	232.0
Hickory	139.3	12.9	19.7	62.2	44.5
Soft maples	126.2	4.0	14.5	82.0	25.7
Ash	83.5	4.5	15.6	46.9	16.5
Yellow-poplar	114.3	22.8	24.0	40.1	27.4
Black locust	27.6	.8	3.2	18.7	4.9
Other hardwoods	202.3	6.4	25.0	130.1	40.8
Total hardwoods	2,946.5	214.9	498.8	1,484.5	748.3
Hardwood quality (in percent)	100	7	17	51	25

[1] See footnote of table 72.
[2] Includes 9,400,000 board feet of other softwoods.

Table 77. — Sawtimber volume on commercial forest land in the NORTHEASTERN unit, by species and quality classes, 1965
(In millions of board feet)

Species	All classes	Standard-lumber logs			
		Grade 1	Grade 2	Grade 3	Other[1]
Softwoods:					
Spruce	5.7	—	—	—	5.7
White pine	63.9	0.9	8.7	29.8	24.5
Hemlock	158.9	—	—	—	158.9
Total softwoods	228.5	.9	8.7	29.8	189.1
Hardwoods:					
Select white oaks	30.5	2.1	5.3	16.4	6.7
Select red oaks	193.4	13.8	33.9	103.5	42.2
Other red oaks	14.1	.2	1.8	7.2	4.9
Chestnut oak	79.6	1.5	10.5	40.5	27.1
Hickory	25.2	1.5	2.2	12.6	8.9
Yellow birch	13.0	.2	2.6	8.6	1.6
Sugar maple	192.8	15.7	40.4	85.9	50.8
Soft maples	188.2	2.3	28.3	111.8	45.8
Beech	126.3	3.1	16.2	67.8	39.2
Ash	73.8	3.6	23.1	33.0	14.1
Aspen	24.4	1.4	2.9	16.1	4.0
Basswood	63.5	3.6	7.6	41.9	10.4
Black cherry	106.1	3.9	19.6	54.8	27.8
Other hardwoods	38.0	2.5	4.1	25.2	6.2
Total hardwoods	1,168.9	55.4	198.5	625.3	289.7
Hardwood quality (in percent)	100	5	17	53	25

[1] See footnote of table 72.

Table 78. — Sawtimber volume on commercial forest land in the POCONO unit, by species and quality classes, 1965
(In millions of board feet)

Species	All classes	Standard-lumber logs			
		Grade 1	Grade 2	Grade 3	Other[1]
Softwoods:					
Yellow pines	94.6	1.4	4.1	52.4	36.7
White pine	423.8	6.3	58.0	196.8	162.7
Hemlock[2]	277.7	—	—	—	277.7
Total softwoods	796.1	7.7	62.1	249.2	477.1
Hardwoods:					
Select white oaks	198.5	14.0	34.6	106.2	43.7
Select red oaks	197.9	14.2	34.6	106.0	43.1
Other red oaks	103.1	1.7	13.2	52.0	36.2
Chestnut oak	188.4	3.6	24.8	95.9	64.1
Hickory	32.9	2.0	2.9	16.4	11.6
Sugar maple	31.7	2.6	6.7	14.0	8.4
Soft maples	211.4	2.5	31.7	125.8	51.4
Beech	66.6	1.7	8.6	35.7	20.6
Ash	41.5	2.1	13.0	18.5	7.9
Aspen	58.6	3.3	6.8	38.9	9.6
Basswood	22.1	1.3	2.6	14.6	3.6
Yellow-poplar	125.1	11.1	8.5	86.5	19.0
Black cherry	45.3	1.6	8.3	23.6	11.8
Other hardwoods	73.5	3.8	9.3	48.5	11.9
Total hardwoods	1,396.6	65.5	205.6	782.6	342.9
Hardwood quality (in percent)	100	5	15	56	24

[1] See footnote of table 72.
[2] Includes 4,800,000 board feet of spruce and other softwoods.

Table 79. — Sawtimber volume on commercial forest land in the SOUTHEASTERN unit, by species and quality classes, 1965
(In millions of board feet)

Species	All classes	Standard-lumber logs			
		Grade 1	Grade 2	Grade 3	Other[1]
Softwoods:					
Yellow pines	35.0	0.2	4.5	16.2	14.1
White pine	56.0	5.3	7.9	25.7	17.1
Hemlock[2]	22.1	—	—	—	22.1
Total softwoods	113.1	5.5	12.4	41.9	53.3
Hardwoods:					
Select white oaks	158.9	9.7	35.4	69.6	44.2
Select red oaks	289.0	18.2	64.5	126.9	79.4
Other red oaks	473.0	24.3	95.2	185.9	167.6
Chestnut oak[3]	218.9	12.0	43.7	88.1	75.1
Hickory	139.3	1.7	15.9	72.3	49.4
Soft maples	80.8	2.2	11.4	52.5	14.7
Blackgum	26.6	—	3.6	20.6	2.4
Ash	56.8	2.2	9.1	34.2	11.3
Yellow-poplar	443.0	70.9	112.4	168.1	91.6
Other hardwoods	126.4	—	14.2	88.7	23.5
Total hardwoods	2,012.7	141.2	405.4	906.9	559.2
Hardwood quality (in percent)	100	7	20	45	28

[1] See footnote of table 72.
[2] Includes 700,000 board feet of other softwoods.
[3] Includes 16,700,000 board feet of other white oaks.

Table 80. — Average net annual growth of growing stock on commercial forest land in Pennsylvania, by species and geographic units, 1954-64
(In millions of cubic feet)

Species	Geographic unit						State total
	Western	South-western	North-Central[1]	South-Central	North-eastern[2]	South-eastern	
Yellow pines	—	0.4	0.9	2.3	1.5	0.5	5.6
White pine	2.5	.8	3.6	1.5	6.0	.4	14.8
Hemlock	3.2	.5	11.3	.8	4.6	.2	20.6
Other softwoods	—	—	.2	.3	.3	—	.8
Total softwoods	5.7	1.7	16.0	4.9	12.4	1.1	41.8
Select oak species	11.0	22.1	50.9	14.4	15.2	8.8	122.4
Other oak species	6.6	10.8	25.9	30.1	15.2	19.0	107.6
Hickory	4.5	2.3	2.5	3.0	1.7	2.5	16.5
Yellow birch	.7	.2	3.3	.1	.5	—	4.8
Sugar maple	5.9	5.8	32.2	.9	6.3	.2	51.3
Soft maples	10.9	8.6	61.4	4.4	14.5	2.4	102.2
Beech	2.1	.9	13.2	.2	3.2	.4	20.0
Ash, walnut, cherry	12.4	7.7	47.3	2.8	5.1	2.6	77.9
Yellow-poplar	2.4	2.5	2.2	1.4	1.3	5.3	15.1
Other hardwoods	9.0	4.5	25.8	6.2	6.6	3.3	55.4
Total hardwoods	65.5	65.4	264.7	63.5	69.6	44.5	573.2
All species	71.2	67.1	280.7	68.4	82.0	45.6	615.0
	Sampling errors, in percent						
Total softwoods	*	*	37	*	38	**	20
Total hardwoods	16	13	9	13	12	12	4
All species	15	12	8	12	11	12	4

* Sampling error of 51 to 100 percent.
** More than 100 percent sampling error.
[1] Includes the Allegheny and North-Central subunits.
[2] Includes the Pocono and Northeastern subunits.

Table 81. — Average annual cut of growing stock on commercial forest land in Pennsylvania, by species and geographic units, 1954-64

(In millions of cubic feet)

Species	Geographic unit						State total
	Western	South-western	North-Central[1]	South-Central	North-eastern[2]	South-eastern	
Yellow pines	—	0.1	0.6	1.2	0.1	—	2.0
White pine	1.8	—	.3	3.8	—	—	5.9
Hemlock	2.9	—	3.6	—	5.7	—	12.2
Other softwoods	—	—	.9	—	—	—	.9
Total softwoods	4.7	.1	5.4	5.0	5.8	—	21.0
Select oak species	5.3	2.8	15.1	2.6	6.4	12.7	44.9
Other oak species	3.6	.9	4.5	9.7	8.4	4.6	31.7
Hickory	—	1.3	2.6	.2	—	—	4.1
Yellow birch	.7	—	1.1	—	1.3	—	3.1
Sugar maple	.7	1.1	5.5	—	1.2	—	8.5
Soft maples	5.8	1.9	9.4	3.2	5.2	—	25.5
Beech	.9	—	8.1	—	1.6	—	10.6
Ash, walnut, cherry	2.6	12.4	13.0	1.3	1.6	.7	31.6
Yellow-poplar	.7	—	.4	—	—	3.7	4.8
Other hardwoods	2.7	3.5	10.7	.3	.7	.3	18.2
Total hardwoods	23.0	23.9	70.4	17.3	26.4	22.0	183.0
All species	27.7	24.0	75.8	22.3	32.2	22.0	204.0
Sampling errors, in percent							
Total softwoods	**	**	*	*	*	—	34
Total hardwoods	33	46	29	45	33	39	15
All species	33	46	28	37	31	39	14

* Sampling error of 51 to 100 percent.

** More than 100 percent sampling error.

[1] Includes the Allegheny and North-Central subunits.

[2] Includes the Pocono and Northeastern subunits.

Table 82. — Average net annual growth of sawtimber on commercial forest land in Pennsylvania, by species and geographic units, 1954-64
(In millions of board feet)

Species	Geographic unit						State total
	Western	South-western	North-Central[1]	South-Central	North-eastern[2]	South-eastern	
Yellow pines	—	0.6	1.4	3.2	3.3	0.8	9.3
White pine	2.0	1.2	12.2	6.7	14.6	1.3	38.0
Hemlock	5.8	1.5	28.5	2.3	9.0	.5	47.6
Other softwoods	—	—	.1	.2	.3	—	.6
Total softwoods	7.8	3.3	42.2	12.4	27.2	2.6	95.5
Select oak species	37.4	43.8	103.1	31.6	22.0	18.2	256.1
Other oak species	21.1	17.2	37.5	42.9	15.1	26.3	160.1
Hickory	6.7	3.4	2.3	3.8	1.6	3.8	21.6
Yellow birch	1.7	.2	2.0	.1	.8	—	4.8
Sugar maple	10.0	8.7	31.7	.8	9.0	.1	60.3
Soft maples	14.6	7.8	66.3	3.4	10.7	2.2	105.0
Beech	5.9	1.1	19.1	.3	5.2	.5	32.1
Ash, walnut, cherry	24.5	12.0	102.6	2.7	10.8	2.1	154.7
Yellow-poplar	6.8	5.7	5.6	3.1	3.6	12.2	37.0
Other hardwoods	22.3	7.2	26.4	7.1	7.1	3.3	73.4
Total hardwoods	151.0	107.1	396.6	95.8	85.9	68.7	905.1
All species	158.8	110.4	438.8	108.2	113.1	71.3	1,000.6
	Sampling errors, in percent						
Total softwoods	**	48	**	*	48	**	23
Total hardwoods	24	17	13	17	16	21	7
All species	22	17	12	18	18	21	6

* Sampling error of 51 to 100 percent.
** More than 100 percent sampling error.
[1] Includes the Allegheny and North-Central subunits.
[2] Includes the Pocono and Northeastern subunits.

Table 83. — Average annual cut of sawtimber on commercial forest land in Pennsylvania, by species and geographic units, 1954-64

(In millions of board feet)

Species	Geographic unit						State total
	Western	South-western	North-Central[1]	South-Central	North-eastern[2]	South-eastern	
Yellow pines	—	0.1	2.5	3.5	—	—	6.1
White pine	6.9	—	—	14.3	—	—	21.2
Hemlock	12.9	—	11.3	—	18.3	—	42.5
Other softwoods	—	—	3.2	—	—	—	3.2
Total softwoods	19.8	.1	17.0	17.8	18.3	—	73.0
Select oak species	16.3	9.0	45.3	8.9	6.9	37.6	124.0
Other oak species	8.0	—	15.0	18.4	8.2	13.8	63.4
Hickory	—	1.7	7.4	.6	—	—	9.7
Yellow birch	—	—	1.2	—	3.4	—	4.6
Sugar maple	1.5	—	12.3	—	.7	—	14.5
Soft maples	14.4	1.6	13.8	2.2	1.9	—	33.9
Beech	2.5	—	16.1	—	5.6	—	24.2
Ash, walnut, cherry	1.2	21.3	18.4	3.6	.9	.3	45.7
Yellow-poplar	1.9	—	—	—	—	12.7	14.6
Other hardwoods	2.1	8.5	19.0	.8	—	.6	31.0
Total hardwoods	47.9	42.1	148.5	34.5	27.6	65.0	365.6
All species	67.7	42.2	165.5	52.3	45.9	65.0	438.6
	Sampling errors, in percent						
Total softwoods	**	**	*	*	*	—	37
Total hardwoods	40	*	39	47	39	42	18
All species	40	*	36	35	42	42	17

* Sampling error of 51 to 100 percent.

** More than 100 percent sampling error.

[1] Includes the Allegheny and North-Central subunits.

[2] Includes the Pocono and Northeastern subunits.

Table 84. — Area of Pennsylvania, by land classes and counties, 1965
(In thousands of acres)

County	Unit	Total land area	Nonforest land area	Forest-land area		Sampling error (percent)
				Non-commercial	Commercial	
Adams	SE	336.6	224.2	1.5	110.9	8
Allegheny	W	467.2	292.8	1.9	172.5	36
Armstrong	W	419.8	207.9	1.9	210.0	21
Beaver	W	282.2	147.6	8.3	126.3	35
Bedford	SW	650.2	207.6	9.8	432.8	8
Berks	SE	553.0	382.6	5.7	164.7	7
Blair	SW	339.8	117.9	1.9	220.0	12
Bradford	NE	734.1	412.9	5.1	316.1	7
Bucks	SE	394.9	294.2	2.0	98.7	10
Butler	W	508.2	246.6	8.9	252.7	21
Cambria	SW	444.8	161.2	5.3	278.3	10
Cameron	A	255.4	7.4	6.0	242.0	2
Carbon	P	259.2	49.1	16.4	193.7	12
Centre	NC	713.6	129.6	35.4	548.6	8
Chester	SE	486.4	368.3	1.3	116.8	9
Clarion	NC	383.3	109.7	6.9	266.7	17
Clearfield	NC	732.1	120.7	25.5	585.9	9
Clinton	NC	577.3	40.3	62.1	474.9	7
Columbia	P	309.8	124.0	.3	185.5	25
Crawford	W	650.2	351.3	1.3	297.6	20
Cumberland	SE	355.2	247.7	1.1	106.4	8
Dauphin	SC	332.8	171.6	5.7	155.5	5
Delaware	—	118.4	118.4	—	—	—
Elk	A	516.5	37.2	7.7	471.6	4
Erie	W	519.7	296.0	.6	223.1	29
Fayette	SW	508.2	190.9	.6	316.7	10
Forest	A	266.2	12.5	2.1	251.6	2
Franklin	SC	482.6	286.3	2.4	193.9	4
Fulton	SC	278.4	88.4	2.4	187.6	4
Greene	W	369.3	183.3	1.0	185.0	23
Huntingdon	SC	570.9	149.1	15.1	406.7	3
Indiana	W	528.0	246.6	—	281.4	19
Jefferson	NC	417.3	99.4	2.3	315.6	16
Juniata	SC	247.7	85.8	1.7	160.2	4
Lackawanna	NE	290.5	117.8	.9	171.8	8
Lancaster	SE	604.2	506.1	.3	97.8	10
Lawrence	W	234.9	142.2	2.5	90.2	49
Lebanon	SE	232.3	161.4	9.2	61.7	10
Lehigh	SE	222.1	171.1	.5	50.5	14
Luzerne	P	570.2	147.8	10.0	412.4	13
Lycoming	NC	777.0	125.7	8.6	642.7	8
McKean	A	638.1	61.4	2.2	574.5	4

Continued

Table 84.—Continued

County	Unit	Total land area	Nonforest land area	Forest-land area		Sampling error (percent)
				Non-commercial	Commercial	
Mercer	W	435.8	276.2	—	159.6	37
Mifflin	SC	275.8	98.8	4.7	172.3	4
Monroe	P	391.0	75.4	8.8	306.8	12
Montgomery	SE	314.2	252.5	1.9	59.8	14
Montour	P	83.2	45.9	—	37.3	67
Northampton	SE	239.4	172.2	.5	66.7	13
Northumberland	P	290.6	132.2	—	158.4	26
Perry	SC	352.0	135.6	.6	215.8	4
Philadelphia	—	81.3	81.3	—	—	—
Pike	P	348.8	33.3	15.1	300.4	3
Potter	A	697.6	79.1	6.0	612.5	5
Schuylkill	P	501.1	155.9	1.0	344.2	14
Snyder	SC	210.6	100.7	2.2	107.7	6
Somerset	SW	693.8	250.4	6.3	437.1	9
Sullivan	A	305.9	44.6	4.5	256.8	9
Susquehanna	NE	535.0	270.6	—	264.4	8
Tioga	A	736.0	212.8	4.9	518.3	9
Union	SC	203.5	96.6	4.1	102.8	5
Venango	NC	432.0	70.3	.2	361.5	10
Warren	A	582.4	93.8	2.8	485.8	10
Washington	W	548.5	328.5	—	220.1	32
Wayne	NE	476.2	194.0	1.3	280.9	7
Westmoreland	W	654.7	342.6	3.1	309.0	19
Wyoming	NE	253.5	116.0	—	137.4	10
York	SE	583.0	430.5	1.8	150.7	7
Total		28,804.5	11,732.4	354.2	16,717.9	1.4

Table 85. — Area of commercial forest land in Pennsylvania, by ownership classes and counties, 1965
(In thousands of acres)

County	Public-owned		Private-owned			Total
	National and State Forests[1]	Other public	Forest industry	Farmer-owned	Other private	
Adams	21.6	0.8	5.1	47.5	35.9	110.9
Allegheny	0	2.2	0	16.3	154.0	172.5
Armstrong	0	3.9	.5	60.3	145.3	210.0
Beaver	0	2.4	0	32.9	91.0	126.3
Bedford	28.6	39.2	3.0	199.0	163.0	432.8
Berks	.7	15.0	7.7	43.1	98.2	164.7
Blair	0	44.4	3.3	41.6	130.7	220.0
Bradford	3.6	43.6	9.7	135.3	123.9	316.1
Bucks	0	4.2	0	22.2	72.3	98.7
Butler	0	3.6	0	69.4	179.7	252.7
Cambria	.2	43.2	9.6	46.7	178.6	278.3
Cameron	112.7	17.1	21.0	6.0	85.2	242.0
Carbon	1.0	48.5	0	15.0	129.2	193.7
Centre	106.6	66.6	11.3	76.8	287.3	548.6
Chester	0	1.1	0	42.9	72.8	116.8
Clarion	0	11.9	17.4	48.5	188.9	266.7
Clearfield	74.2	32.7	12.7	41.4	424.9	585.9
Clinton	189.4	22.2	16.2	25.1	222.0	474.9
Columbia	0	18.8	0	45.8	120.9	185.5
Crawford	0	15.3	5.9	150.7	125.7	297.6
Cumberland	33.6	.6	.5	23.1	48.6	106.4
Dauphin	7.2	41.3	1.3	26.7	79.0	155.5

Elk	179.4	62.4	45.7	15.8	168.3	471.6
Erie	0	6.3	1.0	110.7	105.1	223.1
Fayette	14.5	14.1	.7	70.2	217.2	316.7
Forest	112.7	8.7	33.4	9.6	87.2	251.6
Franklin	36.0	20.0	1.8	51.1	85.0	193.9
Fulton	26.8	9.9	4.9	79.0	67.0	187.6
Greene	0	4.4	.1	62.8	117.7	185.0
Huntingdon	51.9	25.2	.8	124.5	204.3	406.7
Indiana	.5	9.1	1.3	109.1	161.4	281.4
Jefferson	8.7	26.7	12.2	43.7	224.3	315.6
Juniata	15.6	11.5	3.1	55.2	74.8	160.2
Lackawanna	5.3	4.7	0	22.8	139.0	171.8
Lancaster	0	7.7	0	51.3	38.8	97.8
Lawrence	0	1.0	0	33.7	55.5	90.2
Lebanon	0	23.6	0	12.4	25.7	61.7
Lehigh	0	3.6	0	15.3	31.6	50.5
Luzerne	1.4	34.7	1.4	48.0	326.9	412.4
Lycoming	168.3	49.7	15.5	77.8	331.4	642.7
McKean	130.0	35.3	108.6	39.0	261.6	574.5
Mercer	0	1.2	.2	90.4	67.8	159.6
Mifflin	52.7	3.0	4.4	43.2	69.0	172.3
Monroe	8.4	44.7	.6	30.8	222.3	306.8
Montgomery	0	2.0	0	8.1	49.7	59.8
Montour	0	.4	0	11.3	25.6	37.3
Northampton	0	3.9	0	15.5	47.3	66.7
Northumberland	0	9.4	.1	34.9	114.0	158.4
Perry	40.5	5.5	3.0	72.8	94.0	215.8
Pike	50.4	20.7	.4	21.3	207.6	300.4
Potter	260.7	19.7	93.2	81.8	157.1	612.5

Continued

Table 85. — Continued

County	Public-owned		Private-owned			Total
	National and State Forests[1]	Other public	Forest industry	Farmer-owned	Other private	
Schuylkill	7.6	49.1	.1	41.0	246.4	344.2
Snyder	26.5	3.2	3.1	39.3	35.6	107.7
Somerset	26.1	24.9	8.5	179.3	198.3	437.1
Sullivan	37.0	47.7	21.7	29.9	120.5	256.8
Susquehanna	0	12.9	2.5	109.0	140.0	264.4
Tioga	145.0	21.8	19.3	100.0	232.2	518.3
Union	53.7	1.3	5.5	16.9	25.4	102.8
Venango	0	17.8	22.7	41.1	279.9	361.5
Warren	118.0	34.4	52.9	65.3	215.2	485.8
Washington	0	5.0	.2	76.1	138.8	220.1
Wayne	0	13.3	.7	89.5	177.4	280.9
Westmoreland	3.4	12.6	.4	81.3	211.3	309.0
Wyoming	1.3	27.7	10.9	40.0	57.5	137.4
York	0	3.2	3.7	77.6	66.2	150.7
Total	2,161.8	1,222.6	609.8	3,644.7	9,079.0	16,717.9

[1] Includes 113,300 acres of National Forest land in Elk County, 110,600 acres in Forest County, 124,500 acres in McKean County and 118,000 acres in Warren County.

Table 86. — Area of commercial forest land in Pennsylvania, by stand-size classes and counties, 1965
(In thousands of acres)

County	Sawtimber stands	Poletimber stands	Sapling-seedling stands	Non-stocked areas	Total
Adams	60.6	35.3	10.8	4.2	110.9
Allegheny	80.0	26.5	50.7	15.3	172.5
Armstrong	112.6	34.5	51.6	11.3	210.0
Beaver	62.2	23.2	33.1	7.8	126.3
Bedford	215.7	129.5	76.5	11.1	432.8
Berks	87.3	47.7	19.5	10.2	164.7
Blair	119.7	57.6	37.6	5.1	220.0
Bradford	120.3	139.8	42.0	14.0	316.1
Bucks	51.3	28.7	12.2	6.5	98.7
Butler	135.2	42.2	61.9	13.4	252.7
Cambria	155.8	72.8	44.1	5.6	278.3
Cameron	108.2	117.8	15.0	1.0	242.0
Carbon	53.5	83.1	52.6	4.5	193.7
Centre	228.6	220.9	91.9	7.2	548.6
Chester	72.0	29.1	10.2	5.5	116.8
Clarion	86.6	84.7	84.9	10.5	266.7
Clearfield	246.1	224.0	104.8	11.0	585.9
Clinton	200.9	212.2	57.8	4.0	474.9
Columbia	47.0	61.3	71.5	5.7	185.5
Crawford	139.7	49.1	88.9	19.9	297.6
Cumberland	54.8	37.7	10.3	3.6	106.4
Dauphin	94.9	46.5	13.6	.5	155.5
Elk	185.3	210.5	64.6	11.2	471.6
Erie	107.8	40.2	59.7	15.4	223.1
Fayette	153.0	92.0	62.4	9.3	316.7
Forest	91.7	133.5	20.7	5.7	251.6
Franklin	111.0	66.7	15.6	.6	193.9
Fulton	102.2	67.0	17.5	.9	187.6
Greene	83.3	35.8	55.3	10.6	185.0
Huntingdon	197.0	157.1	49.8	2.8	406.7
Indiana	144.5	50.0	73.0	13.9	281.4
Jefferson	111.3	108.4	86.7	9.2	315.6
Juniata	98.2	52.0	9.6	.4	160.2
Lackawanna	61.8	79.7	22.7	7.6	171.8
Lancaster	65.0	22.6	6.6	3.6	97.8
Lawrence	49.7	12.0	21.3	7.2	90.2
Lebanon	44.7	13.0	2.7	1.3	61.7
Lehigh	30.7	12.4	5.1	2.3	50.5

Continued

Table 86.—Continued

County	Sawtimber stands	Poletimber stands	Sapling-seedling stands	Non-stocked areas	Total
Luzerne	102.8	164.0	132.0	13.6	412.4
Lycoming	275.2	282.3	80.7	4.5	642.7
McKean	284.9	188.3	90.3	11.0	574.5
Mercer	67.8	25.7	51.4	14.7	159.6
Mifflin	103.2	60.4	8.4	.3	172.3
Monroe	77.1	129.5	90.2	10.0	306.8
Montgomery	31.9	15.8	8.1	4.0	59.8
Montour	12.8	12.3	11.9	.3	37.3
Northampton	40.6	16.7	6.3	3.1	66.7
Northumberland	48.3	55.6	51.9	2.6	158.4
Perry	122.7	75.0	17.2	.9	215.8
Pike	90.5	157.7	48.0	4.2	300.4
Potter	233.5	302.4	70.9	5.7	612.5
Schuylkill	75.7	110.3	143.4	14.8	344.2
Snyder	54.8	41.2	11.1	.6	107.7
Somerset	215.8	123.0	84.2	14.1	437.1
Sullivan	123.2	100.6	30.9	2.1	256.8
Susquehanna	97.8	111.8	40.5	14.3	264.4
Tioga	172.2	215.1	120.6	10.4	518.3
Union	48.3	47.6	6.7	.2	102.8
Venango	143.2	131.1	78.5	8.7	361.5
Warren	224.9	181.6	72.7	6.6	485.8
Washington	91.5	47.4	64.5	16.7	220.1
Wayne	103.5	121.6	41.4	14.4	280.9
Westmoreland	167.7	50.3	72.9	18.1	309.0
Wyoming	47.5	60.4	21.8	7.7	137.4
York	104.7	31.9	10.0	4.1	150.7
Total	7,332.3	5,816.7	3,081.3	487.6	16,717.9

Table 87. — Area of sawtimber stands in Pennsylvania, by stocking classes and counties, 1965
(In thousands of acres)

County	Growing-stock stocking class			Total for sawtimber stands
	Over 70 percent	40 to 70 percent	Under 40 percent	
Adams	20.9	33.7	6.0	60.6
Allegheny	16.4	45.2	18.4	80.0
Armstrong	24.2	66.5	21.9	112.6
Beaver	11.6	37.7	12.9	62.2
Bedford	68.6	115.7	31.4	215.7
Berks	26.9	50.2	10.2	87.3
Blair	39.9	63.7	16.1	119.7
Bradford	26.4	74.9	19.0	120.3
Bucks	15.7	29.3	6.3	51.3
Butler	31.3	79.0	24.9	135.2
Cambria	53.0	83.5	19.3	155.8
Cameron	44.7	60.3	3.2	108.2
Carbon	25.8	21.5	6.2	53.5
Centre	84.2	118.7	25.7	228.6
Chester	24.7	40.0	7.3	72.0
Clarion	31.1	42.1	13.4	86.6
Clearfield	91.0	126.4	28.7	246.1
Clinton	84.9	99.8	16.2	200.9
Columbia	27.3	14.9	4.8	47.0
Crawford	29.3	76.1	34.3	139.7
Cumberland	19.1	29.8	5.9	54.8
Dauphin	37.0	49.7	8.2	94.9
Elk	96.7	77.0	11.6	185.3
Erie	20.1	65.1	22.6	107.8
Fayette	47.1	83.1	22.8	153.0
Forest	53.4	31.3	7.0	91.7
Franklin	43.9	57.1	10.0	111.0
Fulton	38.3	52.9	11.0	102.2
Greene	13.6	48.1	21.6	83.3
Huntingdon	63.7	103.9	29.4	197.0
Indiana	27.4	85.9	31.2	144.5
Jefferson	41.2	55.0	15.1	111.3
Juniata	37.8	51.6	8.8	98.2
Lackawanna	13.5	37.3	11.0	61.8
Lancaster	21.8	37.1	6.1	65.0
Lawrence	14.0	27.9	7.8	49.7
Lebanon	18.6	23.4	2.7	44.7

Continued

Table 87.—Continued

County	Growing-stock stocking class			Total for sawtimber stands
	Over 70 percent	40 to 70 percent	Under 40 percent	
Lehigh	9.2	18.3	3.2	30.7
Luzerne	53.1	40.8	8.9	102.8
Lycoming	102.7	146.8	25.7	275.2
McKean	157.1	112.5	15.3	284.9
Mercer	14.2	35.8	17.8	67.8
Mifflin	43.8	51.6	7.8	103.2
Monroe	38.6	32.5	6.0	77.1
Montgomery	9.1	18.2	4.6	31.9
Montour	9.2	3.1	.5	12.8
Northampton	13.3	23.3	4.0	40.6
Northumberland	28.4	15.2	4.7	48.3
Perry	47.9	63.2	11.6	122.7
Pike	40.9	42.0	7.6	90.5
Potter	90.9	131.5	11.1	233.5
Schuylkill	41.7	25.5	8.5	75.7
Snyder	20.7	27.7	6.4	54.8
Somerset	67.0	119.3	29.5	215.8
Sullivan	52.9	65.5	4.8	123.2
Susquehanna	21.1	60.6	16.1	97.8
Tioga	67.1	95.9	9.2	172.2
Union	19.3	24.2	4.8	48.3
Venango	49.1	74.6	19.5	143.2
Warren	132.4	84.2	8.3	224.9
Washington	11.7	57.7	22.1	91.5
Wayne	22.5	63.9	17.1	103.5
Westmoreland	38.7	99.3	29.7	167.7
Wyoming	9.8	28.5	9.2	47.5
York	35.1	61.2	8.4	104.7
Total	2,632.6	3,818.3	881.4	7,332.3

Table 88. — Area of commercial forest land in Pennsylvania, by forest types and counties, 1965
(In thousands of acres)

County	Forest type							Total
	White pine	Pitch-Virginia pine[1]	Oak-hickory	Other oak types	Elm-ash-red maple	Maple-beech-birch	Aspen-birch	
Adams	0.4	1.1	80.9	2.0	12.9	11.4	2.2	110.9
Allegheny	7.6	1.4	46.1	4.1	38.3	28.6	46.4	172.5
Armstrong	10.2	1.4	62.4	4.3	51.6	38.1	42.0	210.0
Beaver	5.9	.8	35.2	2.4	29.0	24.6	28.4	126.3
Bedford	10.9	5.6	248.9	20.1	39.8	84.4	23.1	432.8
Berks	—	3.0	98.6	4.3	26.7	26.1	6.0	164.7
Blair	4.8	2.5	121.5	10.9	22.5	46.4	11.4	220.0
Bradford	32.5	—	75.6	—	51.3	114.2	42.5	316.1
Bucks	—	1.9	56.8	2.8	17.1	16.4	3.7	98.7
Butler	12.2	1.7	72.5	4.9	60.8	49.8	50.8	252.7
Cambria	5.9	2.8	154.9	14.2	27.0	60.7	12.8	278.3
Cameron	9.9	—	87.9	.8	27.0	102.5	13.9	242.0
Carbon	21.3	7.8	108.9	5.4	20.0	8.0	22.3	193.7
Centre	37.8	13.0	351.7	6.3	44.2	52.2	43.4	548.6
Chester	—	1.3	78.1	2.7	17.3	14.7	2.7	116.8
Clarion	22.5	12.0	140.1	4.8	17.7	25.7	43.9	266.7
Clearfield	39.9	13.3	347.9	7.5	51.4	71.8	54.1	585.9
Clinton	30.5	4.8	320.9	3.1	29.8	58.9	26.9	474.9
Columbia	24.9	7.5	88.0	4.7	15.9	5.3	39.2	185.5
Crawford	13.5	2.8	81.1	8.3	67.6	54.3	70.0	297.6

Continued

Table 88.—Continued

County	Forest type							Total
	White pine	Pitch-Virginia pine[1]	Oak-hickory	Other oak types	Elm-ash-red maple	Maple-beech-birch	Aspen-birch	
Cumberland	.4	.8	80.3	1.9	11.6	9.7	1.7	106.4
Dauphin	2.7	2.2	125.5	5.4	8.1	11.1	.5	155.5
Elk	22.9	—	98.2	3.6	57.1	225.1	64.7	471.6
Erie	10.3	1.4	61.2	4.4	50.5	42.5	52.8	223.1
Fayette	7.9	4.7	175.2	18.0	28.9	63.8	18.2	316.7
Forest	12.4	—	48.1	7.5	28.8	125.7	29.1	251.6
Franklin	3.7	2.5	160.3	6.0	8.5	12.3	.6	193.9
Fulton	3.5	3.2	150.0	6.9	10.4	12.7	.9	187.6
Greene	8.5	1.6	50.2	4.9	41.3	36.5	42.0	185.0
Huntingdon	9.6	9.5	306.7	18.5	29.4	30.2	2.8	406.7
Indiana	13.7	2.1	83.4	6.3	68.1	52.1	55.7	281.4
Jefferson	31.1	10.9	170.7	4.8	24.6	29.8	43.7	315.6
Juniata	2.7	1.8	130.9	5.3	8.2	10.9	.4	160.2
Lackawanna	15.7	—	37.6	—	30.2	61.7	26.6	171.8
Lancaster	—	.7	69.5	2.2	13.6	10.4	1.4	97.8
Lawrence	4.1	.5	25.0	1.5	21.0	16.9	21.2	90.2
Lebanon	—	.3	50.7	.6	5.4	4.1	.6	61.7
Lehigh	—	.7	34.7	1.1	6.6	6.1	1.3	50.5
Luzerne	43.1	15.6	222.0	8.9	43.5	17.3	62.0	412.4
Lycoming	37.3	12.2	392.2	3.9	51.8	104.4	40.9	642.7
McKean	31.0	—	93.7	2.3	85.9	274.5	87.1	574.5
Mercer	6.7	1.5	39.7	4.4	33.1	28.9	45.3	159.6
Mifflin	2.8	1.3	148.6	3.9	5.2	10.2	.3	172.3

Monroe	28.6	10.9	173.6	6.1	34.4	14.7	38.5	306.8
Montgomery	—	1.1	34.2	1.8	10.5	10.0	2.2	59.8
Montour	6.4	.6	14.2	.3	3.8	2.4	9.6	37.3
Northampton	—	.9	45.7	1.4	8.9	8.1	1.7	66.7
Northumberland	25.7	5.4	71.0	3.9	13.7	5.6	33.1	158.4
Perry	4.4	3.3	176.0	6.9	9.9	14.4	.9	215.8
Pike	24.5	7.4	194.8	4.7	31.1	21.6	16.3	300.4
Potter	31.5	—	103.7	1.9	69.1	339.2	67.1	612.5
Schuylkill	38.4	15.9	173.6	9.2	30.3	8.7	68.1	344.2
Snyder	2.0	2.1	85.5	3.8	5.5	8.2	.6	107.7
Somerset	9.9	7.0	228.3	24.5	36.4	106.2	24.8	437.1
Sullivan	14.5	—	47.1	1.0	48.2	115.8	30.2	256.8
Susquehanna	28.1	—	63.3	—	43.0	88.0	42.0	264.4
Tioga	29.4	—	106.5	1.6	62.8	205.5	112.5	518.3
Union	1.6	.8	88.6	1.9	3.1	6.6	.2	102.8
Venango	33.5	8.6	199.9	5.0	34.8	37.0	42.7	361.5
Warren	23.1	—	88.5	14.1	81.3	210.8	68.0	485.8
Washington	9.6	1.3	54.4	4.0	44.3	47.8	58.7	220.1
Wayne	29.1	—	66.4	—	46.9	93.8	44.7	280.9
Westmoreland	15.1	1.9	92.9	5.8	74.5	55.7	63.1	309.0
Wyoming	13.7	—	30.8	—	24.8	42.3	25.8	137.4
York	—	1.0	119.4	2.0	14.4	11.8	2.1	150.7
Total	929.9	226.4	7,670.8	335.8	2,071.4	3,545.2	1,938.4	16,717.9

[1] Includes small areas of the spruce forest type, a total of 18,800 acres.

Table 89. — Net cubic-foot volume on commercial forest land in Pennsylvania, by tree classes and counties, 1965
(In millions of cubic feet)

County	Saw-timber trees	Pole-timber trees	Total growing stock	Cull trees	Total, all trees
Adams	69.7	50.6	120.3	14.6	134.9
Allegheny	67.5	68.3	135.8	22.4	158.2
Armstrong	98.6	95.8	194.4	28.6	223.0
Beaver	53.3	54.8	108.1	17.1	125.2
Bedford	206.6	217.2	423.8	56.7	480.5
Berks	100.8	67.8	168.6	24.2	192.8
Blair	120.4	115.6	236.0	31.5	267.5
Bradford	108.8	207.8	316.6	53.6	370.2
Bucks	56.8	39.6	96.4	14.5	110.9
Butler	125.0	112.0	237.0	34.5	271.5
Cambria	165.6	149.7	315.3	41.4	356.7
Cameron	134.2	215.0	349.2	31.5	380.7
Carbon	59.4	114.2	173.6	14.9	188.5
Centre	234.7	328.8	563.5	62.7	626.2
Chester	86.5	53.2	139.7	17.6	157.3
Clarion	93.1	126.7	219.8	28.9	248.7
Clearfield	260.2	357.7	617.9	71.0	688.9
Clinton	188.2	283.8	472.0	41.6	513.6
Columbia	53.8	91.8	145.6	11.8	157.4
Crawford	119.3	115.5	234.8	38.4	273.2
Cumberland	61.3	49.6	110.9	12.8	123.7
Dauphin	113.0	90.9	203.9	22.1	226.0
Elk	254.8	353.6	608.4	68.3	676.7
Erie	92.3	95.3	187.6	30.0	217.6
Fayette	142.0	153.8	295.8	40.2	336.0
Forest	138.3	201.4	339.7	42.2	381.9
Franklin	128.5	110.0	238.5	24.7	263.2
Fulton	118.4	104.0	222.4	23.9	246.3
Greene	67.2	73.0	140.2	23.9	164.1
Huntingdon	216.3	205.7	422.0	48.3	470.3
Indiana	120.5	126.0	246.5	38.0	284.5
Jefferson	109.5	156.5	266.0	33.2	299.2
Juniata	116.1	93.3	209.4	22.0	231.4
Lackawanna	56.6	110.2	166.8	28.7	195.5
Lancaster	77.9	47.0	124.9	15.2	140.1
Lawrence	49.3	39.6	88.9	13.1	102.0
Lebanon	60.3	32.6	92.9	9.1	102.0
Lehigh	37.7	22.1	59.8	7.6	67.4

Continued

Table 89.—Continued

County	Saw-timber trees	Pole-timber trees	Total growing stock	Cull trees	Total, all trees
Luzerne	126.2	231.0	357.2	30.7	387.9
Lycoming	281.7	407.7	689.4	69.1	758.5
McKean	372.7	448.0	820.7	101.9	922.6
Mercer	57.9	56.5	114.4	20.7	135.1
Mifflin	125.3	100.8	226.1	21.4	247.5
Monroe	95.3	178.4	273.7	23.8	297.5
Montgomery	37.7	23.4	61.1	8.7	69.8
Montour	17.4	22.8	40.2	2.7	42.9
Northampton	49.8	29.8	79.6	9.9	89.5
Northumberland	53.4	88.4	141.8	10.6	152.4
Perry	146.6	122.7	269.3	27.9	297.2
Pike	103.1	203.5	306.6	25.6	332.2
Potter	303.1	524.1	827.2	79.1	906.3
Schuylkill	84.3	154.3	238.6	21.2	259.8
Snyder	61.4	56.5	117.9	12.8	130.7
Somerset	213.4	214.0	427.4	56.5	483.9
Sullivan	194.3	235.2	429.5	43.7	473.2
Susquehanna	88.8	166.4	255.2	44.0	299.2
Tioga	239.7	378.2	617.9	71.4	689.3
Union	52.4	55.3	107.7	10.8	118.5
Venango	142.4	203.9	346.3	43.2	389.5
Warren	366.1	394.5	760.6	82.3	842.9
Washington	74.7	86.5	161.2	29.5	190.7
Wayne	94.2	178.2	272.4	46.9	319.3
Westmoreland	149.9	140.1	290.0	42.0	332.0
Wyoming	42.6	82.9	125.5	22.5	148.0
York	135.6	74.5	210.1	22.9	233.0
Total	8,072.5	9,788.1	17,860.6	2,142.6	20,003.2

Table 90. — Volume of growing stock in Pennsylvania, by stand-size classes and counties, 1965
(In millions of cubic feet)

County	Stand-size class			Total, all stands	Sampling error (percent)
	Saw-timber stands	Pole-timber stands	Other stands		
Adams	92.4	25.9	2.0	120.3	16
Allegheny	107.7	19.7	8.4	135.8	26
Armstrong	158.5	26.8	9.1	194.4	20
Beaver	83.3	18.6	6.2	108.1	29
Bedford	299.9	108.9	15.0	423.8	9
Berks	131.4	33.4	3.8	168.6	16
Blair	176.6	52.3	7.1	236.0	13
Bradford	160.6	150.4	5.6	316.6	11
Bucks	74.3	19.6	2.5	96.4	21
Butler	192.9	32.9	11.2	237.0	18
Cambria	241.5	65.7	8.1	315.3	10
Cameron	199.2	147.0	3.0	349.2	9
Carbon	79.9	87.1	6.6	173.6	25
Centre	336.3	207.9	19.3	563.5	9
Chester	114.2	23.3	2.2	139.7	19
Clarion	127.2	72.9	19.7	219.8	17
Clearfield	377.3	217.1	23.5	617.9	9
Clinton	268.0	190.0	14.0	472.0	9
Columbia	76.9	62.0	6.7	145.6	52
Crawford	184.6	35.6	14.6	234.8	15
Cumberland	82.1	26.8	2.0	110.9	20
Dauphin	159.6	42.3	2.0	203.9	11
Elk	343.8	255.2	9.4	608.4	7
Erie	144.5	32.0	11.1	187.6	25
Fayette	208.1	75.8	11.9	295.8	11
Forest	171.7	164.2	3.8	339.7	9
Franklin	179.3	56.6	2.6	238.5	10
Fulton	162.6	56.7	3.1	222.4	10
Greene	102.9	27.5	9.8	140.2	27
Huntingdon	285.0	128.3	8.7	422.0	7
Indiana	194.4	39.1	13.0	246.5	19
Jefferson	152.5	92.6	20.9	266.0	14
Juniata	160.1	47.4	1.9	209.4	10
Lackawanna	81.0	82.3	3.5	166.8	14
Lancaster	103.3	20.1	1.5	124.9	23
Lawrence	76.1	9.2	3.6	88.9	39

Continued

Table 90.—Continued

County	Stand-size class			Total, all stands	Sampling error (percent)
	Saw-timber stands	Pole-timber stands	Other stands		
Lebanon	79.3	13.1	.5	92.9	21
Lehigh	48.8	10.1	.9	59.8	28
Luzerne	168.8	174.2	14.2	357.2	25
Lycoming	400.1	272.0	17.3	689.4	8
McKean	539.6	268.5	12.6	820.7	6
Mercer	87.4	18.6	8.4	114.4	21
Miffiin	171.6	52.9	1.6	226.1	9
Monroe	126.1	137.5	10.1	273.7	23
Montgomery	49.0	10.5	1.6	61.1	28
Montour	25.7	13.7	.8	40.2	99
Northampton	64.9	13.5	1.2	79.6	26
Northumberland	79.8	57.2	4.8	141.8	48
Perry	199.8	66.5	3.0	269.3	9
Pike	133.7	165.8	7.1	306.6	10
Potter	434.8	382.3	10.1	827.2	7
Schuylkill	117.4	107.3	13.9	238.6	33
Snyder	83.4	32.7	1.8	117.9	12
Somerset	311.8	99.6	16.0	427.4	9
Sullivan	271.9	153.1	4.5	429.5	9
Susquehanna	130.1	120.4	4.7	255.2	12
Tioga	329.3	277.0	11.6	617.9	8
Union	69.7	36.8	1.2	107.7	14
Venango	203.6	122.8	19.9	346.3	11
Warren	481.7	270.1	8.8	760.6	6
Washington	109.1	39.2	12.9	161.2	24
Wayne	137.7	129.7	5.0	272.4	11
Westmoreland	238.4	38.7	12.9	290.0	18
Wyoming	61.2	61.5	2.8	125.5	17
York	176.1	32.0	2.0	210.1	16
Total	11,420.5	5,930.5	509.6	17,860.6	1.3

Table 91. — Volume of sawtimber in Pennsylvania, by stand-size classes and counties, 1965
(In millions of board feet)

County	Stand-size class			Total, all stands	Sampling error (percent)
	Saw-timber stands	Pole-timber stands	Other stands		
Adams	178.6	15.7	2.8	197.1	23
Allegheny	197.1	9.1	5.9	212.1	32
Armstrong	289.3	12.7	7.6	309.6	26
Beaver	152.9	9.0	5.4	167.3	36
Bedford	560.1	69.9	13.3	643.3	14
Berks	248.2	18.9	5.4	272.5	23
Blair	331.2	32.0	6.0	369.2	19
Bradford	301.3	81.2	6.7	389.2	18
Bucks	138.7	11.0	3.6	153.3	30
Butler	368.4	16.1	9.7	394.2	23
Cambria	463.3	40.6	6.9	510.8	16
Cameron	375.1	91.8	2.7	469.6	18
Carbon	160.6	48.2	6.6	215.4	49
Centre	670.9	113.6	23.5	808.0	15
Chester	219.4	13.1	3.1	235.6	27
Clarion	252.5	31.1	24.4	308.0	28
Clearfield	737.1	108.8	28.0	873.9	15
Clinton	560.6	110.4	15.4	686.4	15
Columbia	163.4	33.4	6.8	203.6	91
Crawford	348.1	16.3	11.1	375.5	19
Cumberland	162.3	17.3	2.8	182.4	29
Dauphin	303.4	29.2	2.5	335.1	16
Elk	661.3	170.2	10.9	842.4	12
Erie	264.6	15.4	9.4	289.4	31
Fayette	381.0	46.6	10.6	438.2	17
Forest	324.6	114.5	3.7	442.8	16
Franklin	345.8	42.8	3.6	392.2	15
Fulton	313.6	43.6	3.9	361.1	16
Greene	189.5	12.9	8.4	210.8	34
Huntingdon	559.8	103.3	10.4	673.5	10
Indiana	347.5	18.4	11.2	377.1	23
Jefferson	302.0	41.2	24.8	368.0	21
Juniata	314.2	35.7	2.5	352.4	14
Lackawanna	155.6	44.6	4.1	204.3	22
Lancaster	197.8	11.3	2.2	211.3	33
Lawrence	148.7	4.5	2.6	155.8	43

Continued

Table 91.—Continued

County	Stand-size class			Total, all stands	Sampling error (percent)
	Saw-timber stands	Other stands	Pole-timber stands		
Lebanon	155.9	7.6	.7	164.2	30
Lehigh	95.0	5.6	1.3	101.9	38
Luzerne	351.3	97.8	14.2	463.3	47
Lycoming	815.8	150.2	20.1	986.1	13
McKean	1,017.7	177.6	15.1	1,210.4	11
Mercer	168.1	8.4	5.9	182.4	25
Miffiin	354.8	45.8	2.4	403.0	14
Monroe	260.1	77.4	10.0	347.5	45
Montgomery	96.4	5.6	2.2	104.2	36
Montour	58.6	8.0	.6	67.2	**
Northampton	125.6	7.6	1.7	134.9	39
Northumberland	169.6	30.0	4.4	204.0	81
Perry	399.3	53.6	3.9	456.8	21
Pike	273.1	96.4	6.5	376.0	21
Potter	820.4	236.9	10.7	1,068.0	13
Schuylkill	244.6	56.3	14.8	315.7	60
Snyder	163.2	26.8	2.3	192.3	18
Somerset	590.2	61.2	14.3	665.7	14
Sullivan	550.5	103.9	4.4	658.8	15
Susquehanna	245.4	65.8	4.9	316.1	20
Tioga	636.2	178.3	14.3	828.8	14
Union	143.6	33.0	1.6	178.2	31
Venango	392.7	57.4	22.7	472.8	18
Warren	964.6	204.4	10.1	1,179.1	10
Washington	202.7	19.1	11.8	233.6	32
Wayne	259.7	70.4	5.5	335.6	18
Westmoreland	440.8	18.7	10.6	470.1	22
Wyoming	116.7	32.7	2.8	152.2	28
York	347.8	18.0	2.6	368.4	22
Total	22,148.9	3,588.9	530.9	26,268.7	1.7

** Sampling error of more than 100 percent.

Table 92. — Volume of growing stock in Pennsylvania, by species groups and counties, 1965
(In millions of cubic feet)

County	Oaks	Other hardwoods	Total hardwoods	Softwoods	All species
Adams	65.9	48.4	114.3	6.0	120.3
Allegheny	34.6	90.5	125.1	10.7	135.8
Armstrong	50.9	127.7	178.6	15.8	194.4
Beaver	26.7	73.1	99.8	8.3	108.1
Bedford	204.5	204.2	408.7	15.1	423.8
Berks	83.8	78.1	161.9	6.7	168.6
Blair	111.4	118.4	229.8	6.2	236.0
Bradford	61.7	219.1	280.8	35.8	316.6
Bucks	46.1	46.2	92.3	4.1	96.4
Butler	62.5	157.4	219.9	17.1	237.0
Cambria	149.4	158.3	307.7	7.6	315.3
Cameron	89.5	239.8	329.3	19.9	349.2
Carbon	79.8	65.6	145.4	28.2	173.6
Centre	314.1	193.4	507.5	56.0	563.5
Chester	70.8	64.0	134.8	4.9	139.7
Clarion	111.4	81.8	193.2	26.6	219.8
Clearfield	332.2	226.3	558.5	59.4	617.9
Clinton	260.1	165.3	425.4	46.6	472.0
Columbia	56.9	54.4	111.3	34.3	145.6
Crawford	59.4	158.1	217.5	17.3	234.8
Cumberland	62.6	41.9	104.5	6.4	110.9
Dauphin	134.4	54.2	188.6	15.3	203.9
Elk	116.9	455.6	572.5	35.9	608.4
Erie	46.3	126.8	173.1	14.5	187.6
Fayette	140.7	144.5	285.2	10.6	295.8
Forest	67.6	248.4	316.0	23.7	339.7
Franklin	160.6	60.1	220.7	17.8	238.5
Fulton	147.8	56.8	204.6	17.8	222.4
Greene	33.0	96.8	129.8	10.4	140.2
Huntingdon	275.3	109.8	385.1	36.9	422.0
Indiana	62.1	163.9	226.0	20.5	246.5
Jefferson	130.0	101.7	231.7	34.3	266.0
Juniata	139.6	54.4	194.0	15.4	209.4
Lackawanna	30.7	117.2	147.9	18.9	166.8
Lancaster	64.6	56.0	120.6	4.3	124.9
Lawrence	24.5	58.0	82.5	6.4	88.9
Lebanon	50.3	39.9	90.2	2.7	92.9
Lehigh	32.2	25.7	57.9	1.9	59.8

Continued

Table 92.—Continued

County	Oaks	Other hardwoods	Total hardwoods	Softwoods	All species
Luzerne	152.6	143.5	296.1	61.1	357.2
Lycoming	338.2	288.9	627.1	62.3	689.4
McKean	140.1	631.3	771.4	49.3	820.7
Mercer	27.9	78.5	106.4	8.0	114.4
Miffiin	153.3	55.2	208.5	17.6	226.1
Monroe	121.1	110.9	232.0	41.7	273.7
Montgomery	29.9	29.2	59.1	2.0	61.1
Montour	12.6	17.6	30.2	10.0	40.2
Northampton	42.1	34.8	76.9	2.7	79.6
Northumberland	54.2	52.5	106.7	35.1	141.8
Perry	182.7	67.5	250.2	19.1	269.3
Pike	150.3	117.2	267.5	39.1	306.6
Potter	134.6	646.7	781.3	45.9	827.2
Schuylkill	98.9	87.3	186.2	52.4	238.6
Snyder	77.8	30.1	107.9	10.0	117.9
Somerset	197.3	215.3	412.6	14.8	427.4
Sullivan	78.8	325.2	404.0	25.5	429.5
Susquehanna	52.7	172.8	225.5	29.7	255.2
Tioga	119.7	459.7	579.4	38.5	617.9
Union	73.6	23.9	97.5	10.2	107.7
Venango	171.1	135.7	306.8	39.5	346.3
Warren	176.1	528.6	704.7	55.9	760.6
Washington	34.6	115.5	150.1	11.1	161.2
Wayne	55.2	185.7	240.9	31.5	272.4
Westmoreland	79.1	188.3	267.4	22.6	290.0
Wyoming	24.7	85.8	110.5	15.0	125.5
York	117.5	86.6	204.1	6.0	210.1
Total	6,887.6	9,496.1	16,383.7	1,476.9	17,860.6

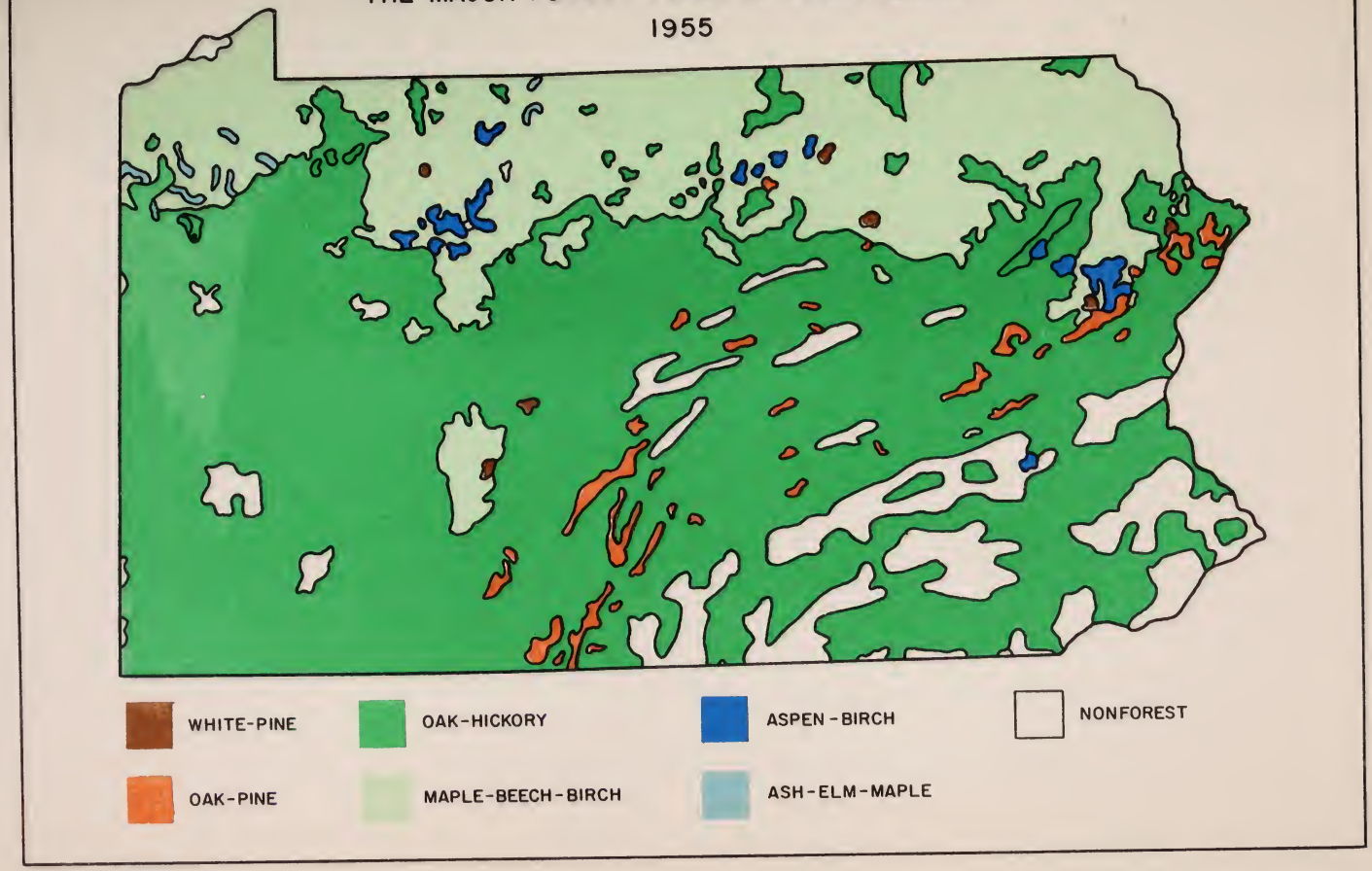
Table 93. — Volume of sawtimber in Pennsylvania, by species groups and counties, 1965
(In millions of board feet)

County	Oaks	Other hardwoods	Total hardwoods	Softwoods	All species
Adams	107.1	76.4	183.5	13.6	197.1
Allegheny	75.2	124.3	199.5	12.6	212.1
Armstrong	110.4	180.9	291.3	18.3	309.6
Beaver	56.4	100.9	157.3	10.0	167.3
Bedford	347.9	267.2	615.1	28.2	643.3
Berks	138.7	117.4	256.1	16.4	272.5
Blair	200.5	158.7	359.2	10.0	369.2
Bradford	81.9	245.4	327.3	61.9	389.2
Bucks	75.8	68.0	143.8	9.5	153.3
Butler	142.7	230.5	373.2	21.0	394.2
Cambria	280.4	217.7	498.1	12.7	510.8
Cameron	143.5	280.8	424.3	45.3	469.6
Carbon	75.0	65.4	140.4	75.0	215.4
Centre	474.8	200.9	675.7	132.3	808.0
Chester	122.3	101.8	224.1	11.5	235.6
Clarion	169.0	80.7	249.7	58.3	308.0
Clearfield	498.3	231.0	729.3	144.6	873.9
Clinton	403.6	163.1	566.7	119.7	686.4
Columbia	54.4	60.8	115.2	88.4	203.6
Crawford	133.0	221.6	354.6	20.9	375.5
Cumberland	101.9	65.9	167.8	14.6	182.4
Dauphin	223.5	74.9	298.4	36.7	335.1
Elk	191.8	563.1	754.9	87.5	842.4
Erie	98.0	174.1	272.1	17.3	289.4
Fayette	232.6	187.1	419.7	18.5	438.2
Forest	108.6	280.2	388.8	54.0	442.8
Franklin	266.3	84.5	350.8	41.4	392.2
Fulton	242.6	75.5	318.1	43.0	361.1
Greene	69.1	129.0	198.1	12.7	210.8
Huntingdon	448.6	138.7	587.3	86.2	673.5
Indiana	128.8	224.8	353.6	23.5	377.1
Jefferson	196.9	98.7	295.6	72.4	368.0
Juniata	239.8	75.3	315.1	37.3	352.4
Lackawanna	38.9	131.7	170.6	33.7	204.3
Lancaster	109.4	91.8	201.2	10.1	211.3
Lawrence	57.8	90.4	148.2	7.6	155.8
Lebanon	90.6	66.6	157.2	7.0	164.2
Lehigh	56.3	41.0	97.3	4.6	101.9
Luzerne	141.4	159.0	300.4	162.9	463.3

Continued

Table 93—Continued

County	Oaks	Other hardwoods	Total hardwoods	Softwoods	All species
Lycoming	505.8	337.8	843.6	142.5	986.1
McKean	253.5	834.0	1,087.5	122.9	1,210.4
Mercer	62.6	110.0	172.6	9.8	182.4
Mifflin	275.9	79.0	354.9	48.1	403.0
Monroe	112.6	122.2	234.8	112.7	347.5
Montgomery	56.2	43.7	99.9	4.3	104.2
Montour	14.0	25.5	39.5	27.7	67.2
Northampton	72.9	55.5	128.4	6.5	134.9
Northumberland	52.8	59.2	112.0	92.0	204.0
Perry	311.5	95.3	406.8	50.0	456.8
Pike	140.1	131.7	271.8	104.2	376.0
Potter	214.5	753.2	967.7	100.3	1,068.0
Schuylkill	97.6	84.9	182.5	133.2	315.7
Snyder	127.5	39.4	166.9	25.4	192.3
Somerset	358.6	284.1	642.7	23.0	665.7
Sullivan	148.6	450.0	598.6	60.2	658.8
Susquehanna	79.6	185.3	264.9	51.2	316.1
Tioga	186.5	557.3	743.8	85.0	828.8
Union	117.6	30.6	148.2	30.0	178.2
Venango	253.5	135.9	389.4	83.4	472.8
Warren	343.5	699.0	1,042.5	136.6	1,179.1
Washington	68.3	151.2	219.5	14.1	233.6
Wayne	81.1	199.6	280.7	54.9	335.6
Westmoreland	172.7	270.4	443.1	27.0	470.1
Wyoming	36.1	89.3	125.4	26.8	152.2
York	208.6	144.8	353.4	15.0	368.4
Total	11,086.0	11,914.7	23,000.7	3,268.0	26,268.7


THE MAJOR FOREST TYPES IN PENNSYLVANIA
1955
WHITE-PINE
OAK-HICKORY
ASPEN-BIRCH
NONFOREST
OAK-PINE
MAPLE-BEECH-BIRCH
ASH-ELM-MAPLE

THE FOREST SERVICE of the U. S. Department of Agriculture is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives — as directed by Congress — to provide increasingly greater service to a growing Nation.

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